



FOR THE PEOPLE
FOR EDVCATION
FOR SCIENCE

LIBRARY
OF
THE AMERICAN MUSEUM
OF
NATURAL HISTORY

GUIDE TO THE BIRDS OF EUROPE
AND NORTH AFRICA

7/8/1924/collated O.K.

GUIDE TO THE BIRDS OF EUROPE AND NORTH AFRICA

BY

COLONEL R. G. WARDLAW RAMSAY

President of the British Ornithologists' Union, 1913-1918

Fellow of the Zoological Society

59.82(3)

WITH A BIOGRAPHICAL MEMOIR BY

WILLIAM EAGLE CLARKE, LL.D.

259.82(3)
FD

GURNEY AND JACKSON
LONDON: 33 PATERNOSTER ROW
EDINBURGH: TWEEDDALE COURT

1923

24-26756 July '4

PREFACE

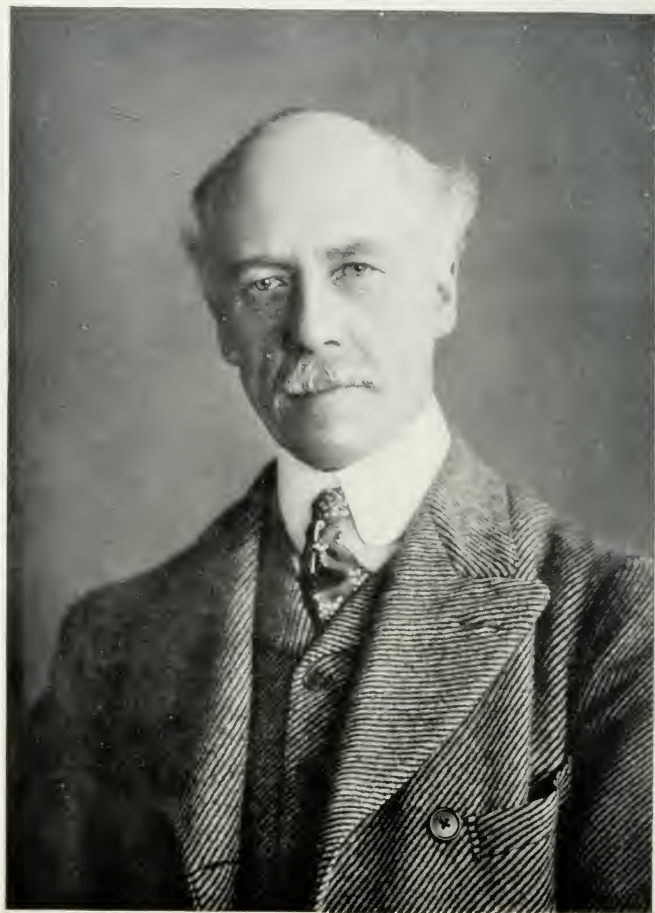
SEVERAL years previous to his death, Colonel Wardlaw Ramsay, realising that a concise pocket "Guide to the Birds of Europe and North Africa" was a great desideratum, devoted much time to the preparation of such a work, and on many occasions consulted me on various matters as it progressed. A few days before he passed away he had premonitions that his end was near and said to me as I sat beside him, "If I do not pull through this illness, I leave my unfinished book to you quite unconditionally: publish it or not as you think best." On examination, the draft manuscript was found to be practically complete so far as the descriptions of the various species and racial forms, and their geographical distribution, were concerned; but otherwise much remained to be done before the work would be in a state to send to the Press. Being engaged on other ornithological work at the moment, it was unfortunately impossible for me to give the necessary attention to the "Guide," but on mentioning the situation to my friend Surgeon-Rear-Admiral Stenhouse, M.B.O.U., he at once kindly volunteered to help me, and it is entirely due to his valued co-operation that this work has so promptly appeared.

Most of the measurements given have been taken by Dr Stenhouse from specimens in the Royal Scottish Museum: when sufficient material was not available, the measurements have been copied from the works of Dr Hartert (*Vögel der paläarktischen Fauna*), and Mr Witherby (*Handbook of British Birds*), and are acknowledged by "H." and "W."

within brackets. The bill measurements, unless otherwise stated, are from the level of the end of the frontal feathers in a straight line to the tip of the bill, *i.e.*, in a curved bill, like a Falcon's, the measurement is not that of the chord of the curve. Measurements are in millimetres, and for the convenience of those who are not familiar with the metric system it may be said that twenty-five millimetres are practically equal to one inch.

The systematic arrangement followed is that of Hartert's work previously mentioned, but Colonel Wardlaw Ramsay did not adopt Hartert's nomenclature in all cases.

WM. EAGLE CLARKE.



COLONEL R. G. WARDLAW RAMSAY

In Memoriam

ROBERT GEORGE WARDLAW RAMSAY.

ROBERT GEORGE WARDLAW RAMSAY was the only son of Robert Balfour Wardlaw Ramsay of Whitehill, Midlothian, and Tillicoultry in Clackmannanshire, and Louisa, third daughter of George, eighth Marquess of Tweeddale. He was educated at Cheam and Harrow, and elected to follow a military career. He received his Commission in the Hampshire Regiment in January 1871, and soon after left for India; went through the Afghan Campaign, and saw service in Burmah and the Andaman Islands. Later he transferred to the Highland Light Infantry, afterwards commanding the 7th Volunteer Battalion of the Royal Scots, and eventually acting as Chairman of the Territorial Force Association. During the Great War he commanded a Brigade of the Territorial Force Reserve on Coast Defences.

He retired from the Army on the death of his father in 1882, and from that year until his death he took an active part in County affairs. He was Deputy-Chairman for the County of Midlothian; Chairman of the Territorial Forces for that County; Chairman of the Edinburgh and East of Scotland College of Agriculture, and was also closely associated with charitable work. Though by nature reserved in manner, he was a singularly attractive personality to those who knew him intimately—a man who lived up to high ideals, and the personification of all that was

honourable and best. He was the revered friend of the writer of this notice for over thirty years.

Colonel Wardlaw Ramsay, who had been keenly interested in the study of birds from boyhood, was elected a Member of the British Ornithologists' Union in 1872, and its President from 1913 to 1918; and was a Fellow of the Zoological Society. He commenced to contribute to ornithological literature in 1874, as is indicated by the list of his various papers which forms the conclusion of this notice. On the death of his uncle, Arthur, Marquess of Tweeddale, who was for many years the distinguished President of the Zoological Society, Wardlaw Ramsay inherited the vast collection of birds formed by that nobleman. This the inheritor generously presented to the British Museum (Natural History), on condition that a set of duplicate specimens was to be sent to the Edinburgh Museum. He also handed over the very valuable ornithological library, which came to him with the collections, to the Natural History Museum, on condition it was placed in the Bird-room for the use of the officers and students working there. It is now known as the Tweeddale Library. In 1881 he edited and revised a memorial volume entitled *The Ornithological Works of Arthur, Ninth Marquess of Tweeddale*, a quarto of 760 pages. During the last years of his life, his ornithological activities were devoted to the preparation of this "Guide," which he did not live to see in book form.

Colonel Wardlaw Ramsay was in his seventieth year, and had been seriously ill for about a month, when he passed away on the 22nd April 1921. He married the elder daughter of Mr Charles Swinton Hogg, Administrator-General of Bengal, and second son of Sir James Weir Hogg, Bart., by whom, as well as three sons and two daughters, he is survived.

The following is a List of Papers contributed by the late Colonel R. G. Wardlaw Ramsay :—

- "Description of a New Species of Woodpecker (*Gecinus erythropygius*) from British Burmah." *Proc. Zool. Soc.*, 1874, pp. 212-213.
- "Ornithological Notes from the district of Karen-nee, Burmah." *Ibis*, 1875, pp. 348-353.
- "On an undescribed species of Nuthatch (*Sitta magna*) and another bird (*Orocetes erythrogaster*) from Karen-nee." *Proc. Zool. Soc.* 1876, p. 677.
- "Notes on some Burmese Birds." *Ibis*, 1877, pp. 452-473.
- "A Synopsis of the genus *Pomatorhinus*." *Ibis*, 1878, pp. 129-145.
- "Description of a new Oriole from Borneo (*Oriolus consobrinus*)." *Proc. Zool. Soc.* 1879, p. 709.
- "Ornithological Notes from Afghanistan" (Nos. I. and II.). *Ibis*, 1879, pp. 444-449 ; 1880, pp. 45-71.
- Contributions to the Ornithology of Sumatra :—"Report on a collection from the neighbourhood of Padang." *Proc. Zool. Soc.* 1880, pp. 13-16.
- "Descriptions of Two New Species of Birds (*Analcipus consanguineus* and *Edoliosoma alterum*)." *Ibis*, 1881, pp. 32-34.
- "Descriptions of Two New Species of Birds from Sumatra (*Hemixus sumatranus* and *Criniger sumatranus*)." *Ann. Mag. Hist.* x. 1882, p. 431.
- "Catalogue of the Tweeddale Collections." *Ibis*, 1884, p. 123.
- Contributions to the Ornithology of the Philippine Islands :—No. 1, "On two collections of Birds from the vicinity of Manila." *Ibis*, 1884, p. 330. No. 2, "On additional collections of Birds." *Ibis*, 1886, p. 15.
- "On the Columbine genus *Macropygia* and its allies." *Ibis*, 1890, p. 214.
- "On a New Genus of the Order Columbæ." *Ibis*, 1890, p. 246.

W. E. C.

CONTENTS

	PAGE
PASSERES	I
CYPSELI	147
CAPRIMULGI	149
MEROPEs	151
UPUPÆ	153
CORACIÆ	154
HALCYONES	154
PICI	156
CUCULI	165
STRIGES	167
ACCIPITRES	177
GRESSORES	204
PHŒNICOPTERI	212
ANSERES	213
STEGANOPODES	235
TUBINARES	239
PYGOPODES	246
COLUMBÆ	251
PTEROCLETES	255
LIMICOLÆ	258
LARI	290
ALCÆ	309
ALECTORIDES	313
TURNICES	322
GALLI	322
INDEX	335

BIRDS OF EUROPE AND NORTH AFRICA

PASSERES.

Perching birds: 3 toes in front, 1 behind.

CORVIDÆ.

The largest Passeres. Wing with 10 primaries, of which the 1st is short, but always longer than primary coverts, and about half the length of 2nd; nares covered with bristles.

CORVUS.

Mostly black with metallic sheen; nasal bristles prone; omnivorous; nest in cliffs or trees, or occasionally on ground; eggs 4-5, pale bluish or greenish ground colour, blotched or spotted with black or brown.

Corvus corax corax L. RAVEN. *Fr.* Corbeau; *Ger.* Kolkrahe; *Ital.* Corvo imperiale; *Swed.* Korp.

♂ ♀ Black, with steel blue and purple gloss; throat feathers hackled; feathers grey at base; nasal bristles long and stiff. Bill, legs and feet black. Wing ♂ 400-436, ♀ 395-420 (W.). Tarsus 63-68. Bill 62-68, greatest height 31. Young are dull black with throat feathers short and rounded.

Resident.—Europe generally, including Faroes ("C. c. varius," feather bases whitish and less purple gloss on feathers), Britain, Iceland ("C. c. islandicus," feathers rather greenish tinged), south to Pyrenees, Alps, Apennines, Crete (Meinertzhagen) and possibly Greece; and in W. Siberia.

C. corax hispanus Hartert and Kleinschmidt. Rather smaller, wing not exceeding 430; throat hackles very short. Intermediate

between typical "corax" and "tingitanus" as to bill, which is high and strong and more curved than in "corax," longer than in "tingitanus."

Resident.—Spain and Portugal, Corsica, Sardinia.

"C. c. sardus" Kleinschmidt appears inseparable from this race.

C. corax canariensis Hartert and Kleinschmidt. Bill as in typical "corax," but smaller, as is entire bird. Wing 390-415 (H.). From "tingitanus" distinguished by its weaker, straighter and less high beak.

Resident.—Canary Islands.

C. corax tingitanus Irby. Bill shorter, higher, stouter, length 60-64; throat hackles shorter; wing not over 430; upper back tinged brown in worn plumage.

Resident.—N. Africa from W. Egypt (Sollum) to Morocco, south to Atlas. Accidental Madeira.

C. corax laurencei Hume. Intermediate between typical "corax" and larger eastern "tibetanus" (which has wing 480-497 and very long throat hackles). Becomes very brown on head in worn plumage. Wing 400-450.

Resident.—From Greece, through Asia Minor, E. to N.W. India.

C. corax ruficollis Lesson. Smaller. Bill more slender; head, neck, and occasional feathers on underparts brownish at all seasons except just after moult, but most marked in worn plumage; neck feathers whitish at base. "Wing 350-420. Bill from skull 57-75. Height 20-25.5" (Meinertzhagen).

Resident.—N. Africa in desert places, from Cape de Verdes to Egypt; south of range of "tingitanus" in Morocco, Tunis, and Algeria; also through Palestine to India.

Corvus rhipidurus Hartert. FANTAILED RAVEN.

♂ ♀ Bill short and much curved; nasal bristles fan-shaped, pointing upwards; primaries and secondaries very long in proportion to tail, which is short and broad. Wing 340-410. Tail 140-160. Tarsus 55. Bill 50-60 (H.).

Resident.—N.E. Africa, Middle and Upper Egypt, Arabia, and Palestine.

Corvus cornix cornix L. HOODED CROW. *Fr.* Corneille mantelée; *Ger.* Nebelkrähe; *Ital.* Cornacchia; *Swed.* Grå Kråka.

♂ ♀ Black, glossed with blue and violet; neck (sides and behind), back, and underparts ashy grey. Bill, legs and feet black. Wing ♂ 315-338, ♀ 295-319. Tarsus 53-60. Bill 46-52.

Breeds.—Europe generally, E. and N. of a line from Elbe and Rhine down to Italy; Ireland, Isle of Man, Mid and N. Scotland, Faroes. Partial migrant; occurs in winter Holland, Belgium, England, Switzerland, W. Germany. Of rare occurrence in N.W. Africa. Interbreeds with "*C. corone*" and hybrids are fertile.

C. cornix sardonius Kleinschmidt. Smaller. Wing ♂ 280-324, ♀ 278-317 (Meinertzhagen).

Resident.—Corsica, Sardinia, Balkans, Palestine, Egypt.

C. cornix kaukasicus Gengler. Grey with strong brown tinge, especially on back; shaft streaks dark grey, not very conspicuous; wings also strongly tinged with brown, neck lighter blue gloss; bases of feathers pale grey.

Resident.—Caucasus.

C. cornix minos Meinertzhagen. Nearest "*C. c. pallescens*" from Cyprus, a very pale form approaching "*C. capellanus*" from the Persian Gulf, but differs in longer wing and deeper and longer beak. Wing 313-327 ("*pallescens*" 294-299). Culmen 55-61, height 20-22 ("*pallescens*" 49-56, height 17.5-19). (Meinertzhagen.)

Resident.—Crete; may prove to occur also in Greek islands.

Corvus corone corone L. CARRION CROW. *Fr.* Corneille noir; *Ger.* Rabenkrähe; *Ital.* Cornacchia nera.

♂ ♀ Black, glossed with purple, greener on wings and tail; nostrils covered with feathers. Bill, legs and feet black. Wing 310-324. Tarsus 52-59. Bill 47-52. Young may be distinguished from those of Rook by white bases to feathers of body.

Breeds.—England, S. and C. Scotland, Denmark, Holland, Belgium, France, N. Spain and Portugal, W. Germany, Switzerland, Bohemia, N. Italy, and from E. Russia east to Yenisei. Largely resident; occurs in winter in C. and S. Italy, and W. Mediterranean Isles, Azores and Madeira.

Corvus frugilegus frugilegus L. ROOK. *Fr.* Corbeau-Freux; *Ger.* Saatkrähe; *Ital.* Corvo nero; *Swed.* Raka.

♂ ♀ Black, glossed with purple and violet; bases of feathers

grey; bill more slender and pointed than in "corone"; base of bill and front part of face bare and skin very rough. Bill, legs and feet black. Wing 292-320. Tarsus 52-54. Bill 49-54. Young are duller, with root of bill feathered and nostrils covered.

Breeds.—Europe generally, including British Isles, from about 64° N., south to S. France, N. Italy, Dobrudscha, Crimea. Occurs in winter Spain, Portugal, Mediterranean basin and islands. Algeria (occasional), Egypt, Caucasus, Azores (occasional), Madeira (rare). Migrates from northern part of breeding range. Resident Britain, and many migrants come there in winter from East.

Corvus monedula monedula L. JACKDAW. *Fr.* Choucas gris; *Ger.* Dohle; *Ital.* Taccola; *Swed.* Kaja.

♂ ♀ adult. Black, glossed purple and green on wings and tail; crown bright purple, back and rump greyer, nape and neck whitish grey, whiter (almost forming a white patch) on sides; beneath dark slate grey with a brown tinge. Bill, legs and feet black. Iris bluish white. Wing 220-243. Tarsus 42-46. Bill 28-32.

Breeds.—Scandinavia, Finland, Baltic Provinces. Possibly some migrate, but has not yet been recorded as occurring elsewhere.

C. monedula spermologus Vieillot. Darker, especially on underparts; neck not so pale grey and no indication of white neck patches.

Breeds.—British Isles; Europe south of range of typical "monedula" and west of Russia, to Italy, Sicily, Malta, Sardinia and Morocco. Partly migratory; occurs in winter in Corsica, Greece, Canary Islands (rare).

C. monedula collaris Drummond. Paler on underparts than preceding forms; white neck patches almost form a collar.

Breeds.—Russia, Balkan States, Greece, Caucasus. Also W. Asia (Asia Minor to Kashmir). Occurs in winter in E. Prussia and Poland, but is largely resident.

C. monedula cirtensis Rothschild and Hartert. Paler than "spermologus," pure slate grey with no brown tinge, neck greyer. In worn plumage very brown, and sometimes brown feathers,

especially on wings, survive the moult and are found in winter with fresh grown grey feathers.

Resident.—Constantine, N. Algeria.

PICA.

Black-and-white Crow-like birds with long, graduated tail; 1st primary sickle-shaped; food, worms, snails, acorns, eggs, small mammals and birds, rarely carrion; nest large, domed, in trees or bushes; eggs pale bluish white or yellowish olive, spotted or blotched with purplish grey or greenish brown.

Pica pica pica (L.). MAGPIE. *Fr.* Pie ordinaire; *Ger.* Elster; *Ital.* Cecca; *Swed.* Skata.

♂ ♀ Black, with green and violet reflections; a grey or dull white bar on rump; scapulars and abdomen white; thighs and under tail coverts black. Bill, legs and feet black. Wing ♂ 192-195, ♀ 182-187. Tarsus 45-52. Bill 30-36.

Resident.—Europe generally (including British Isles), except Spain and Portugal and extreme N.E. of Russia; also W. Asia (Asia Minor to Persia).

P. pica bactriana Bonaparte. Rump band very marked, mostly white. Wing 210-227 (H.). A N. Asian race, which is found to the west in the Ural Mountains. Two specimens from Petchora, N.E. Russia, in Harvie-Brown collection belong to this form. Wing ♂ 217, ♀ 210.

P. pica melanota Brehm. Back and rump black, or rump band very indistinctly marked.

Resident.—Spain and Portugal.

P. pica mauritanica Malherbe. Rump entirely black; behind eye a naked cobalt blue patch; size smaller. Wing 155-165 (H.).

Resident.—N.W. Africa, Tunis to Morocco.

CYANOPICA.

Resemble Magpies in habits and structure, but not in plumage; 1st primary normal in shape; nest cup-shaped, on trees; eggs greenish white or buff marked with purplish or dark brown.

Cyanopica cyanus cooki Bonaparte. AZURE-WINGED MAGPIE.

♂ ♀ Above dove grey, head black, secondaries blue; primaries black with white edges; tail blue with white tips; beneath white, flanks and under tail coverts washed with ashy-brown. Bill, legs and feet black. Wing 128-136. Tarsus 33-36. Bill 17-21.

Resident.—S. and Middle Spain and Portugal. Typical "cyanus" and another subspecies are found in N.E. Asia.

NUCIFRAGA.

Resemble Jays in habits; food, nuts, cone-seeds, insects, berries; nest, cup in trees, generally conifers; eggs greenish white, finely marked with pale liver brown.

Nucifraga caryocatactes caryocatactes (L.). NUT-CRACKER. *Fr.* Chasse noix; *Ger.* Tannenhäher; *Ital.* Nocciolaja; *Swed.* Nötkräka.

♂ ♀ Colour dark chocolate with white spots; tail tipped with white, spots 5-10 m.m. long. Bill thick and blunt, black. Legs and feet black. Wing 180-195. Tarsus 35-40. Bill 41-43, depth at angle 13-16.

Breeds.—Scandinavia to about 64° N., Baltic Provinces, Lapland, Finland, Russia (from Jaroslav and Moscow to Urals and south to Ekaterinburg), E. Prussia, Denmark (occasional), S. Germany and Bohemia, Alpine system of C. Europe to Carpathians, Montenegro, Croatian littoral, and Pyrenees. Resident. Rare visitor elsewhere including Britain, generally in autumn and winter.

N. caryocatactes macrorhynchus Brehm. Bill longer, more slender and pointed, 42-50 m.m. long, 12-14 deep at angle; white spots on outer tail feathers longer, about 25-30 m.m.

A Siberian breeding race; occasionally occurs in winter as far west as Britain, France, and Pyrenees, south to N. Italy and Hungary.

GARRULUS.

Crow-like; crested, with a chequered blue and black patch on wings; food, insects, fruit, eggs, small mammals

and birds; nest, cup in tree or bush; eggs greenish white with brown spots and a few black hair lines.

Garrulus glandarius glandarius (L.) JAV. *Fr.* Geai; *Ger.* Eichelhäher; *Ital.* Ghiandaja; *Swed.* Nötskrika.

♂ ♀ Above vinous brown tinged grey, especially on back; crown streaked, feathers black with broad white margins; rump and upper tail coverts white; tail black with faint blue bars; secondaries black, base of outer three white, innermost chestnut with black tips; wing coverts barred black and blue; ear coverts, sides of neck, and hind neck vinous; beneath dull vinous, chin and throat white. Iris bluish white. Bill black. Legs and feet flesh colour. Wing 172-190. Tarsus 40-43. Bill 21-25.

Breeds.—Continental Europe from about 65° in Norway east to Urals, south to Pyrenees and N. Spain, Sicily, Italy, Greece, S.W. Russia to Volga and Ural Valleys. Largely resident. Occasional in winter in Britain; accidental Malta.

G. glandarius rufitergum Hartert. Above and below redder than typical form, being only faintly grey on back and breast.

Resident.—England and Scotland.

G. glandarius hibernicus Witherby and Hartert. Much darker and redder than "rufitergum," especially on underparts; crown distinctly vinous, and black streaks more intense.

Resident.—Ireland.

G. glandarius fasciatus Brehm. Bill stronger than in typical form, upper mandible much curved; stripes on crown broader and no white on forepart; breast tinged with grey.

Resident.—S. Spain.

G. glandarius ichnusæ Kleinschmidt. Rather smaller than typical form, most noticeable in bill; white of forehead less conspicuous owing to broader stripes; nape and hind neck dull vinous; back greyer, less vinous.

Resident.—Sardinia.

G. glandarius corsicanus Laubmann. Vinous tinge on back intense, lacking grey tinge; larger than "ichnusæ" and bill stronger, but has the same broad stripes on crown.

Resident.—Corsica.

G. glandarius cretorum Meinertzhagen. Very near "ichnusæ" but has slightly redder hind neck and greyer back. Similar in size.

Resident.—Crete ; Ilex forests at 4000 feet upwards.

G. glandarius minor Verreaux. Smaller. Wing ♂ 162-170, average 165. Very little white on forecrown, duller vinous on neck and face, greyer and less vinous both above and below.

Resident.—South Atlas ranges of Algeria and Morocco.

G. glandarius krynicki Kalenicz. Slightly larger than typical form ; crown entirely black, forehead white with black tips and reddish tinge ; face and ear coverts pale vinous. Greyish vinous back distinguishes it from "atricapillus" (Syria and Palestine).

Resident.—Caucasus, Crimea, Thrace and Asia Minor.

G. glandarius whitakeri Hartert. Resembles "cervicalis," but nape, hind neck, and sides of neck vinous brown in sharp contrast to a greyer back with hardly any vinous tinge. Intermediate with "minor."

Resident.—N. Morocco, N.W. Algeria (Oran).

G. glandarius cervicalis Bonaparte. Nearest "atricapillus" from Syria, but back grey, more so than in typical form ; nape, hind neck, and sides of neck bright rusty red ; entire crown black, feathers on forehead white at bases only ; face, ear coverts, and throat pure white.

Resident.—N. Tunisia, N.E. Algeria south to Aures Mountains.

G. glandarius brandti Eversmann. Crown foxy red with black streaks, without any white ; hind neck and nape rich rufous ; below more reddish brown than typical form ; similar in size.

A N. Asiatic form, which occurs in winter in Orenburg district of Russia along with typical form.

PERISOREUS.

Near "Garrulus" but bill broader and straighter ; tail more graduated ; plumage soft and downy ; frequent northern

forests, especially pine ; food, insects, berries, small mammals, reptiles, and young birds : nest, cup in conifer ; eggs pale greenish white marked with purplish grey and hair brown.

Perisoreus infaustus infaustus (L.). SIBERIAN JAY.
Ger. Unglückshäher ; *Swed.* Låfskrika.

♂ ♀ Crown and nape sooty brown ; mantle, wings, and two central tail feathers grey ; margin of quills, some wing coverts, upper tail coverts, and tail foxy red ; beneath grey, rufous on abdomen and under tail coverts. Bill, legs and feet black. Wing ♂ 136-147, ♀ 135-140. Tarsus 33-36. Bill 15-18.

Resident.—Europe, north of Baltic, to about 69° ; N. Russia, Esthonia and Livonia. Rare visitor Germany and Denmark.

PYRRHOCORAX.

Black, Crow-like birds, with thin red or yellow bills and feet ; inhabit mountains or sea cliffs ; gregarious ; food, insects, worms, seeds, berries ; nest in caves or clefts in cliffs, rocks, ruins ; eggs creamy white, occasionally pale green, with faint purplish grey and light and dark brown blotches.

Pyrrhonorax pyrrhonorax (L.). CHOUGH. *Fr.* Crave ; *Ger.* Steinkrähc.

♂ ♀ Black, glossed with steel blue, wings and tail glossed green. Bill curved, red (in young orange brown). Legs and feet red. Wing ♂ 275-313, ♀ 265-288. Tarsus 50-54. Bill 42-51.

Resident.—Coasts of British Isles except E., W. France, Pyrenees, Mountains C. and S. Europe from Portugal and Spain eastwards, Sicily, Sardinia, Corsica, Balearic Isles (accidental), Croatian littoral, Greece, Mountains N.W. Africa and Coasts of Algeria, Caucasus ; also Asia east to Himalayas.

Pyrrhonorax graculus (L.). ALPINE CHOUGH. *Fr.* Chocard ; *Ger.* Alpendohle ; *Ital.* Gracchio.

♂ ♀ Glossy black ; bill yellow, shorter, stouter and straighter than in "pyrrhonorax." Legs and feet red. Wing 253-280. Tarsus 45-47. Bill 20-25.

Resident.—Mountains of C. and S. Europe ; Spain, Portugal, Italy, Corsica, Greece, Caucasus ; also W. Asia (Asia Minor to Himalayas).

STURNIDÆ.

Wing with 10 primaries, 1st very short. No rictal bristles; nostrils not covered by feathers.

STURNUS.

Wings long and pointed, 1st primary small but visible; bill wide, flat and straight; gregarious birds of metallic plumage; food, worms, insects, larvæ, etc.; nest in holes in trees, walls, or cliffs; eggs greenish blue.

Sturnus vulgaris vulgaris L. STARLING. *Fr.* Étourneau; *Ger.* Star; *Ital.* Storno; *Swed.* Stare.

♂ ♀ summer. Black with metallic reflections of purple or green or steel blue, generally with a few buff apical spots; head and neck dark green with or without purple reflections; ear coverts green; under wing coverts brown with buff margins; flanks purple. In winter, plumage above spotted with buff and below with white tips. Bill yellow in summer, dark brown in winter. Legs and feet red brown. Wing ♂ 125-137, ♀ 123-131. Tarsus 28-30. Bill 20-24. Young; brown, throat and streaks on underparts white, margins of quills and tail rufous.

Breeds.—Europe, including British Isles, from N. Norway and about 64° in Russia to Pyrenees and Italy. Partial migrant; occurs in winter south to Spain, Portugal, Madeira, Canaries, and all N. Africa from Morocco to Egypt.

S. vulgaris faroensis Fielden. Larger; 1st primary longer and broader, wing and tail somewhat longer, bill larger. Wing 133-134. Bill 24-25. Young are darker, less marked with white below.

Resident.—Faroe Islands.

S. vulgaris zetlandicus Hartert. Nearer "faroensis" than "vulgaris"; young distinctly darker than in "vulgaris"; bill not so broad and long as in "faroensis" but broader than in "vulgaris"; 1st primary not so broad as in "faroensis." Wing 131-138 (H.).

Resident.—Shetland Isles.

S. vulgaris granti Hartert. 1st primary 10-13 m.m. long, generally about 2 m.m. shorter than in "vulgaris." Bill averages smaller.

Resident.—Azores.

S. vulgaris sophiæ Bianchi. Head more purplish, especially on crown and throat ; ear coverts greenish.

Breeds.—East Russia, Moscow to Urals. Occurs Caucasus on passage, and in winter Cyprus and Egypt.

S. vulgaris balcanicus Buturlin and Härms. Crown and ear coverts purple, latter occasionally green ; hind neck, upper back and upper tail coverts green, lower back and rump green to purplish blue ; edges to wing coverts, secondaries and scapulars bluish purple or violet ; throat, breast and abdomen purple ; under wing coverts as in "vulgaris." Resembles "poltaratskyi" of W. Asia, but under wing coverts and axillaries have narrower buff margins.

Breeds.—Bulgaria and Rumania to Dniester.

S. vulgaris græcus Tschusi. Head and neck purple with slight green reflections ; ear coverts varying purple to green ; back, rump and upper tail coverts green with purplish tinge on upper back ; breast and abdomen green, flanks purple ; wing coverts and secondaries purple with green reflections. Very close to and doubtfully separable from "sophiæ."

Breeds.—Greece. Migrates ; has occurred at Malta.

S. vulgaris tauricus Buturlin. Scapulars, upper wing coverts, rump and upper tail coverts reddish purple, back deep green and sometimes tinged purple ; head and throat green, sometimes with purple tinge ; underparts purple ; flanks purplish bronze. Wing 141-142. Like "purpurascens" of Asia Minor, but wing longer.

Breeds.—Crimea.

S. vulgaris caucasicus Lorenz. Head green generally with purple reflections ; ear coverts green, breast green, abdomen steely purple, back and scapulars green, wing coverts brilliant purple, also flanks and secondaries ; under wing coverts grey with white margins.

Breeds.—Caucasus to Persia.

S. vulgaris poltaratskyi Finsch. Under wing coverts brown with broader buff margins than in "vulgaris"; head, throat and ear coverts purple; back metallic green.

A Siberian race which occurs in Egypt in winter.

Sturnus unicolor Temminck.

♂ summer. Black with purple and green reflections, feathers long and lanceolate, no spots. In winter, spotted with small arrow-shaped white dots. Bill in summer yellow, greyish at base; in winter blackish. Legs and feet brownish flesh. Wing 127-135. Tarsus 29-30. Bill 25-26. ♀ like ♂ but smaller; wing down to 121. Young much as in "S. vulgaris" but darker.

Resident.—Spain, Portugal, Morocco, Algeria, Sicily, Sardinia, Corsica.

PASTOR.

Crested; resembles "Sturnus" in habits and food; nests in colonies in holes in walls or rocks, in uncertain years and localities; eggs pale bluish white.

Pastor roseus (L.). ROSE-COLOURED STARLING. *Fr.* Martin roselin; *Ger.* Rosenstar; *Ital.* Storno marino.

Adult. Rose-colour above and below; head, neck, forebreast, wings, tail, and thighs black. Bill rosy, brown at base. Legs and feet dull brown. Wing 128-132. Tarsus 29-30. Bill 16-19. Young greyish brown with yellowish or rufous margins, paler beneath, head and foreneck with dark streaks. The fully adult plumage is not assumed till third year.

Breeds.—S. E. Europe from Austria and Hungary through Balkan States and S. Russia to Caucasus, and east to Turkestan; sporadically and sometimes in great numbers; elsewhere in Europe irregular or rare visitor. Winters in India.

ORIOIDÆ.

1st primary well developed; beautifully coloured birds; frequent gardens and woods; food, insects, caterpillars, fruit; nest, a cup in trees suspended below a fork; eggs white, faint pink when fresh, spotted purplish black.

ORIOIUS.

1st primary about half the length of 2nd ; lores feathered.

Oriolus oriolus oriolus (L.). GOLDEN ORIOLE. *Fr.* Lorient ; *Ger.* Pirol ; *Ital.* Rigogolo ; *Swed.* Sommargylling.

♂ adult. Yellow ; lores, wings, and tail black. Bill dull red. Iris red. Legs and feet bluish grey. Wing ♂ ♀ 148-158. Tarsus 20-23. Bill 21-24. ♀ duller ; above yellowish green ; tail olive green, black at tips ; beneath whitish, washed yellow and streaked dark brown. Very old ♀ occasionally as bright as ♂ but always slightly streaked. Young are like ♀.

Breeds.—Norway (very rare), Sweden up to 63° N. ; Russia to 60° N. ; generally distributed over rest of Europe except British Isles, where occurs on passage and breeds regularly in small numbers in S.E. and S.W. England ; N.W. Africa. Migratory ; winters in S. Africa.

FRINGILLIDÆ.

Bill cone-shaped ; wing, 9 visible primaries (true 1st being very tiny and invisible) ; tail 12 feathers ; one moult in autumn, the differing spring plumage being due to wearing off of feather edges ; contains Finches, Sparrows, Siskins, etc. ; granivorous but also insectivorous, especially when feeding young ; nest in trees, bushes, or in a bank ; mostly gregarious in winter.

COCCOTHAUSTES.

Beak powerful, thick, broad and high ; inner primaries much shorter than outer and markedly curved at ends like a bill-hook.

Coccothraustes coccothraustes coccothraustes (L.). HAWFINCH. *Fr.* Grosbec ; *Ger.* Kirsch Kernbeisser ; *Ital.* Frosone.

♂ adult, summer. Crown brown, forehead yellower ; hind neck ashy grey ; back dark brown, rump lighter ; quills black with long white patch on inner web ; larger coverts white, forming a wing band ; middle tail feathers grey brown, with white tip, others black with large portion of inner web white ; lores and

throat black ; underparts vinous brown, middle of abdomen and under tail coverts white. Bill bluish. Legs and feet flesh colour. Iris whitish. Wing ♂ 100-106, ♀ 97-106. Tarsus 19-22. Bill 15-18. In winter, colour duller and bill dull flesh colour. ♀ duller coloured ; crown, rump, and under parts more greyish brown. Young ; head brownish yellow ; throat yellow ; back lighter brown with faint spots ; below dull white with blackish brown spots.

Breeds.—From S. Scandinavia and Petrograd in Russia, south over Europe, more abundant in south ; England and S. Scotland. Chiefly resident. Rare visitor Ireland ; occasional in Sicily, Malta, and Egypt.

C. coccothraustes buvryi Cabanis. Paler, greyer (best seen in female) ; bill less massive ; white on wings and tail less extensive.

Resident.—N.W. Africa (Tunis to Morocco), S. Spain.

C. coccothraustes tatjanæ Kudascheff. ♂ in summer light rosy below ; forehead lighter and back darker than in typical form.

Resident.—Crimea.

CHLORIS.

Plumage greenish ; tail long and forked ; bill short and thick ; nest open, in trees or bushes ; eggs dull bluish or greenish white with reddish shell markings and deep red brown spots and streaks.

Chloris chloris chloris (L.). GREENFINCH. *Fr.* Verdier ; *Ger.* Grünling ; *Ital.* Verdone ; *Swed.* Grönfink.

♂ adult. Above yellowish green, washed with brownish grey, brighter and yellower on forehead, face, and underparts, especially middle of abdomen ; primaries outer web yellow, secondaries and greater wing coverts margined and tipped slate grey ; tail feathers, except central pair, yellow at base and margined grey. Bill dark brown above, paler below. Legs and feet pale pinkish straw. Wing ♂ 85-89, ♀ 82-88. Tarsus 17-20. Bill 10-12. ♀ browner, except on rump, and faintly streaked ; much less yellow on wings and tail. Young : above brown ; beneath greenish yellow with dark brown streaks.

Breeds.—Norway to about 65° N., S. Sweden, Livonia, Russia, Tyrol, Germany, N. France, Holland, Belgium, Denmark, and British Isles. Partly migratory.

C. chloris madaraszi Tschusi. Above deeper, more intense green than in "chloris," and browner, less grey tinged; beneath darker; somewhat shorter winged.

Resident.—Corsica, Sardinia.

C. chloris muhlei Parrot. Size as typical form, but darker grey above, not so dark as "madaraszi." Wing ♂ 87, ♀ 83.

Breeds.—S. Hungary, Italy, Balkan Peninsula (Rumania to Greece); Asia Minor, Cyprus. Partly migratory.

C. chloris aurantiiventris Cabanis. Brighter, with scarcely any brown grey tinge on upper parts, and more uniformly yellow beneath. Wing 80-86.

Breeds.—S. France, Spain and Portugal, N.W. Africa (Tunis to Morocco). Migratory; more abundant N.W. Africa and S. Spain in winter.

The Cretan Greenfinch's status is not yet determined; it may be near "chlorotica," a smaller and brighter form from Syria.

CARDUELIS.

Brightly coloured with yellow in wing; bill sharp and pointed; nest in trees; eggs 4-5, greenish white with faint reddish shell markings and dark reddish brown blotches and streaks.

Carduelis carduelis carduelis (L.). GOLDFINCH. *Fr.* Chardonneret; *Ger.* Stieglitz; *Ital.* Cardellino.

Adult. Above wood brown; mask crimson; ear coverts, cheeks and nuchal spot white; lores and neck band black; wings black and yellow with white tips; beneath white, sides of breast and flanks washed with brown; tail white on inner web and white tipped. Bill whitish with dark tip. Legs dull flesh. Wing ♂ 76-80, ♀ 73-78. Tarsus 14-15. Bill 9-11. Young: no red mask, chin and throat white; above greyish brown, below yellowish brown, both with dark streaks; quills tipped buff.

Breeds.—Europe generally, from 67° N. in Norway and Sweden and 60° N. in Russia south to N. Spain in W. and Central Russia in E. Partly migratory.

C. carduelis britannicus (Hartert). Above darker, white nuchal spot almost obsolete, mask lighter crimson, white parts less pure, more brownish, flanks browner.

Breeds.—British Isles. Is largely resident.

C. carduelis tschusii Arrigoni. Resembles "britannicus" but smaller; bill more slender, ear coverts browner; mask deep crimson as in typical form.

Resident.—Sardinia and Corsica.

C. carduelis parvus Tschusi. Smaller, darker; bill smaller; wing shorter; nuchal spot less distinct than in "carduelis." Wing 70-78.

Resident.—Madeira, W. Canary Islands, Azores.

C. carduelis weigoldi Reichenow. Like "parvus" but brown duller. Wing 70-77.

Breeds.—Portugal, S. and N.W. Spain. Considerable migratory movement occurs.

C. carduelis africanus (Hartert). Close to "parvus," but bill larger, wing longer, brown colour paler, and nuchal patch more distinct. Wing 78.

Breeds.—N.W. Africa, Morocco to Tunisia; Central and S.E. Spain, Balearic Islands.

C. carduelis balcanicus Sachtleben. Size as typical form; brown of flanks greyer, breast patches more distinct, band across chest very distinct.

Breeds.—Dalmatia, Bosnia, Macedonia, Greece.

C. carduelis rumæniæ Tschusi. The darkest Goldfinch; white nape spot washed with brown; above reddish brown; breast and flanks clear rusty brown; ear coverts brown tinged.

Breeds.—Rumania, Bulgaria, and Bessarabia.

C. carduelis volgensis Buturlin. A large form, approaching "C. c. major" of W. Asia in size but nearer to typical form in colour of back, rump and upper tail coverts, whiter than in "carduelis" but not as extensively so as in Asiatic race.

Breeds.—C. and S. Russia to Urals.

C. carduelis brevirostris Sarudny. Upper parts paler grey. Wing 75-81.

Breeds.—Caucasus. Occurs in winter Asia Minor, Cyprus.

C. carduelis major Taczanowski. Larger; with much more white on rump and upper tail coverts. Wing 83-89. Tarsus 15. Bill 13-14.

A W. Siberian form, ranging in winter to E. Russia and even to Poland and Prussia.

Carduelis caniceps orientalis (Eversmann). "Caniceps" differs from "carduelis" in all races in having no black on the head.

A S. Siberian race of "C. caniceps" which has occurred at Orenburg, E. Russia.

SPINUS.

Bill pointed as in "Carduelis"; colours green and yellow.

Spinus spinus (L.). Siskin. *Fr.* Tarin; *Ger.* Zeisig; *Ital.* Lucarino; *Swed.* Grönsiska.

♂ adult. Above green, faintly streaked; rump yellow; crown black (tipped with grey in winter); beneath, chin black, eyebrow and breast yellow, abdomen white, flanks yellowish streaked brown, under wing coverts and axillaries yellow. Bill flesh coloured with black tip. Legs and feet brown. Wing ♂ 70-73, ♀ 68-71. Tarsus 14-16. Bill 8-9. ♀ has no black on crown; above greyish green with broader streaks; nape yellow, rump yellow streaked; beneath, whitish tinged yellow on breast.

Breeds.—Scandinavia to 67° N., Finland, N. and C. Russia, British Isles, C. Europe south to Pyrenees and Italian Alps; Caucasus and in Asia. Migratory; occurs in winter irregularly in Mediterranean countries and in Egypt and N.W. Africa; also in East south to China.

Spinus citrinella citrinella (L.). CITRIL FINCH. *Fr.* Venturon alpine; *Ger.* Zitronenzeisig; *Ital.* Venturone.

♂ adult. Yellowish green, narrowly streaked, greyish on mantle; nape and sides of neck bluish grey; wing coverts brown with broad yellow green tips forming a bar. Bill horn brown, lighter below. Legs and feet brown. Wing ♂ 75-79, ♀ 73-76 (W.). Tarsus 13-15. Bill 7-8. ♀ more brownish grey with less yellow. Young browner, rump paler, wing bar yellow buff, beneath buffy with white streaks.

Breeds.—Mountains of France, Austria, Hungary, Germany (Black Forest), N. Italy, Spain, Greece. In winter occurs irregularly C. and S. Italy.

S. citrinella corsicana (Koenig). Mantle brown, streaked, no grey tinge, rump greener, and forehead more brilliant; yellower beneath.

Resident.—Corsica; of doubtful occurrence mainland Italy.

ACANTHIS.

Adult males with red crowns, rumps, or breasts, especially conspicuous in summer, after autumn moult reddish-brown margins almost obscure this colour; gregarious, except in summer; food, seeds, but also insects, fruit, etc.; cup nest in tree, bushes, or on ground (Twite); eggs bluish white marked with purplish grey and reddish or dark brown.

Acanthis cannabina cannabina (L.). LINNET. *Fr.* Linotte; *Ger.* Hänfling; *Ital.* Fanello; *Swed.* Hämpling.

♂ adult, summer. Chestnut brown, grey on hind crown and neck, forecrown and breast blood-red; quills white on outer margins; upper tail coverts mixed with white, tail feathers with white margins, broader on inner webs; beneath buffy white streaked on chin, but no black chin spot, flanks reddish brown. Bill lead colour. Legs and feet brown. Wing ♂ 80-84, ♀ 77-81. Tarsus 15-17. Bill 8-9. After autumn moult red much obscured by pale brown margins. ♀ darker, browner, no red on head or breast, flanks streaked. Young much as ♀ but more distinctly streaked.

Breeds.—Norway to 64° N., Sweden to 68°, Russia east to Urals; British Isles; south to N. Spain, Portugal, N. Italy, Hungary, Rumania. Partly migratory; occurs in N. Africa in winter.

A. cannabina mediterranea Tschusi. Difficult to distinguish from typical form; rather smaller and more brightly coloured. Wing ♂ 75-79, ♀ 74-79.

Breeds.—Mediterranean countries; from Portugal and Spain east to Turkey, Greek Islands, and Crete; also N.W. Africa, Morocco to Tunis. Partly migratory.

A. cannabina harterti Bannerman. Smaller than "mediterranea," and lighter below. Wing ♂ 74-76.

Resident.—E. Canaries (Lanzarote, Fuerteventura, Graciosa, and Allegranza).

A. cannabina nana (Tschusi). Grey on head very dark, back chestnut, underparts brownish. Wing ♂ 74-77.

Resident.—Madeira.

A. cannabina meadewaldoi Hartert. Colour as in "nana" but bill stronger. Wing ♂ 76-80.

Resident.—W. Canaries (Tenerife, Gran Canaria).

Acanthis flavirostris flavirostris (L.). TWITE. *Fr.* Linotte montagnarde; *Ger.* Berghänfling.

♂ adult. Above darker and less chestnut than "cannabina," feathers with ochreous tips; tail longer; throat and chest tawny; only rump rosy; primaries with white, secondaries and tail with pale brown margins. Bill yellow with dark tip. Feet and legs dark brown. Wing ♂ 73-80, ♀ 70-75. Tarsus 16-17. Bill 7-8. ♀ has no red on rump. Young are like female.

Breeds.—C. and N. England, Ireland, Scotland, W. Coast Norway to 70° N., Sweden and N. Russia. Partly migratory; occurs in winter south to S. France and Switzerland. Rare in Spain, Italy, S. Russia.

The British birds have been separated by Kleinschmidt as "A. f. parallelicolor," on account of their darker colour, but further confirmation of its validity is required.

Acanthis linaria linaria (L.). MEALY REDPOLL. *Fr.* Sizerin boréal; *Ger.* Birkenzeisig; *Swed.* Gräsiska.

♂ adult. Above light brown, with dark streaks, whiter and washed with rosy colour on rump; crown blood-red; two pale wing bars; lores and chin spot dark brown, throat and chest rosy; breast and abdomen dull white, flanks streaked. Bill brown, yellow at base. Legs and feet dark brown. Wing ♂ 70-78, ♀ 70-75. Tarsus 14-15. Bill 6-7. In winter bill is yellower, and general colour paler, more mealy. ♀ like ♂ but only head red. Young like ♀ but have no red on head.

Breeds.—Scandinavia, Finland, N. Russia to about tree limit, south to Baltic Provinces and E. Prussia; also across Siberia and

Arctic N. America. Migratory; occurs in winter south in Russia to Orenburg, Germany, Switzerland, Holland, Britain.

Larger individuals with wings 75-81 and bill 8-9, have been named "*A. l. holboellii*" (Brehm).

A. linaria rostrata (Coues). GREATER REDPOLL. Larger, darker, with a stouter bill; more coarsely streaked on underparts. Wing ♂ 78-84, ♀ 73-81. Tarsus 14-16. Bill 9-10. The rose colour does not appear to be ever so pronounced.

Resident in Greenland; occurs in N. America in winter; fairly regular at Fair Isle, occasional in Orkneys, Outer Hebrides, Ireland.

A. linaria cabaret (Muller). LESSER REDPOLL. Like "*linaria*" but smaller; darker and more rufous on upper parts. Wing ♂ 67-73, ♀ 63-69 (W.). Bill 6-7, yellow, brown at tip. ♀ more streaked; no red on breast or rump.

Breeds.—Britain, Alpine regions of France, Switzerland, Germany, Italy, Balkan Peninsula and Carpathians. Partly migratory. Occurs in winter on plains of C. and S. Europe, Sicily, Malta, and occasionally Morocco.

Acanthis hornemanni hornemanni (Holböll). HORNE-MANN'S REDPOLL.

♂ ♀ Like "*linaria*" but larger and paler; rump white, unstreaked, and washed with delicate rose; beneath white, with faint rosy tinge on breast and few or no streaks. Bill very short and conical. Wing ♂ 84-90, ♀ 80-84 (H.). Tarsus 15-17. Bill 7.5-9. In winter is much whiter than in summer.

Breeds.—Greenland; has occurred Spitzbergen and Jan Mayen. In winter in N. America. Rare visitor to British Isles.

A. hornemanni exilipes (Coues). COUES' REDPOLL. ♂ ♀ Smaller than "*hornemanni*" and generally darker; white rump less pure; red on breast more distinct; flanks and under tail coverts more streaked. Wing ♂ 74-78, ♀ 69-76. Tarsus 13-15. Bill 6-7.

Range.—Circumpolar. *Breeds*.—Lapland and N. Russia in Europe. In winter rare in Britain, S. Sweden, E. Prussia, Orenburg in Russia.

SERINUS.

Bill swollen, mandibles equally curved to tip; resemble Grosbeaks in shape.

Serinus canarius serinus (L.). SERIN FINCH. *Fr.* Serin; *Ger.* Girlitz; *Ital.* Verzellino.

♂ Above, crown, back, and wings yellowish green with dark brown streaks, forehead and rump yellow; beneath yellow, streaked on flanks, abdomen white. Bill dark horn, paler below. Legs and feet brown. Wing ♂ 70-76, ♀ 67-70. Tarsus 13-14. Bill 5. ♀ less yellow and more streaked.

Breeds.—N.W. Africa, S. Europe north to C. France, Switzerland, and Poland. Migratory. Occurs in winter in Egypt. Rare visitor to Britain.

S. canarius germanicus Laubmann. Yellow parts greenish tinged.

Breeds.—S. and W. Germany, N. France, Holland and Belgium; also migrates.

S. canarius canarius (L.). CANARY. Like "serinus" but slightly larger; back chiefly grey with little green; rump yellow green; forehead olive yellow with dark streaks. Bill, legs and feet as in "Serin." Wing ♂ 71-76, ♀ 67-70 (H.). Tail longer 55-59 (in "serinus" 50-52).

Resident.—Azores, Madeira and Canary Islands (except Fuerteventura and Lanzarote).

ERYTHROSPIZA.

Rosy Finches. Long winged; tail forked; bill conical, red; frequent hilly and sterile places; nest in a hole in ground or on trees; eggs pale greenish, marked with reddish or greenish brown.

Erythropsiza githaginea githaginea (Lichtenstein). TRUMPETER BULLFINCH.

♂ adult, winter. Greyish brown, crown grey, rump, upper tail coverts, and margins of wings and tail rosy; beneath pale grey, rosy tinged. Bill brownish yellow. Legs and feet brown.

Wing 86-88. Tarsus 18. Bill 9-10 (H.). In summer rosy colour becomes brighter. ♀ much less rosy beneath. Young: above rosy sandy brown, below brighter, middle of abdomen white.

Resident.—Tripoli to upper Egypt. Occurs at times in Malta; rarer in S. Europe.

E. githaginea zedlitzii Neumayer. Larger than typical form. Wing ♂ 86-92. More sandy and rosy above; but less rosy than "amantum," and not mixed with brown.

Resident.—Morocco, Algeria, and Tunisia, south of Atlas.

E. githaginea amantum Hartert. Smaller than typical form; bill larger; darker above with deeper tinge of rose at all seasons, much mixed with brown feathers. Wing ♂ 83-87 (H.).

Resident.—Canary Islands (Fuerteventura, Lanzarote, Graciosa, Allegranza, Gran Canaria, Tenerife).

RHODOPECHYS.

Bill very strong; tail comparatively short, slightly forked; inhabits stony, rocky hills; nest in bush or tree; eggs faint greenish white, grey spotted.

Rhodopechys sanguinea aliena Whitaker.

♂ Above sandy brown, spotted black on back; centre of crown and nape black, hind neck ashy, rump brown, quills slightly margined carmine; beneath, throat whitish, tinged rosy, flanks brown, abdomen white, slightly rosy tinged, pectoral band grey. Wing 101.5 (Whitaker). Bill brownish yellow with black tip. Legs and feet black. ♀ Forehead and crown brighter brown, throat with no rosy tinge.

Resident.—S. E. Morocco (Atlas Mountains).

The typical race "R. s. sanguinea" is W. Asiatic.

PYRRHULA.

Bill short, strong, convex; frequent woods, orchards, gardens; nest, cup in trees; eggs greenish blue spotted and blotched with purplish grey and dark brown.

Pyrrhula pyrrhula pyrrhula (L.). BULLFINCH. *Fr.* Bouvreuil; *Ger.* Gimpel; *Ital.* Cuiffolotto; *Swed.* Domherre.

♂ Crown, nape, fore part of face, chin, secondaries, upper tail coverts and tail bluish black ; back, scapulars, lesser and median wing coverts and tips of greater coverts grey ; inner secondary with outer margin red ; rump and under tail coverts white ; sides of head and neck and underparts red. Bill black. Legs and feet brown. Wing 90-98. Tarsus 18-19. Bill 8-10. ♀ mantle ashy brown, outer web of inner secondary grey ; beneath brown, slightly vinous. Wing 86-93.

Breeds.—Scandinavia to 69°, Finland, N. and C. Russia east to Ufa, Baltic Provinces, E. Prussia, Galicia, Hungary, Rumania. Partly migratory ; occurs in winter in Britain (rare), Europe generally to S. France, Italy, Macedonia, Greece, Turkey and S. Russia.

P. pyrrhula europæa Vieillot. Smaller than "pyrrhula." ♂ darker grey above often washed with red ; beneath less bright. ♀ distinctly duller and browner than typical ♀. Wing ♂ 81-88.5 (H.).

Breeds.—Central Europe from Holland and Belgium to Poland, south to Mountains of Balkan Peninsula, N. and C. Italy, N. Portugal. In winter occurs Algeria and Tunisia, S. Italy (rare), Sicily (occasional), Malta (accidental).

P. pyrrhula pileata Macgillivray. ♂ indistinguishable in colour from ♂ "europæa." ♀ back browner and underparts darker than ♀ "europæa." Wing 78-84.

Resident.—British Isles.

P. pyrrhula rossikowi Derjugin and Bianchi. Like "pyrrhula" in size, but grey of back purer and bluer and red below much deeper.

Resident.—Caucasus.

P. pyrrhula murina Godman. Sexes almost alike and resembling ♀ "europæa." ; beneath brownish grey, rump and under tail coverts grey brown. Wing 88-90. Tarsus 20 (H.).

Resident.—St Michael (Azores).

CARPODACUS.

Bill thick and short, longer than in "Pyrrhula" ; sexes different ; cup nest in bushes ; eggs blue with deep brown spots.

Carpodacus rubicillus rubicillus Gldenstadt.

♂ General colour crimson, brownish on back, more rosy on tail coverts ; ear coverts silvery, quills and tail brown ; beneath crimson with white centres. Bill yellowish. Legs and feet dark brown. Wing 118. Tarsus 22. Bill 13.5-15.5 (H.). ♀ light brown throughout with faint dark central streaks. Wing 115.

Resident.—Caucasus Mountains.

Carpodacus erythrinus erythrinus (Pallas). SCARLET GROSBEEK. *Fr.* Roselin cramoisi ; *Ger.* Karmingimpel.

♂ Crown, nape, lower back, rump, chin, throat, and chest carmine ; back, scapulars, and lesser wing coverts brown tinged carmine ; abdomen white washed carmine. Bill brownish horn. Legs and feet brown. Wing ♂ 80-86, ♀ 79-83 (W.). Tarsus 18-19. Bill 8-10. ♀ greyish streaked olive brown, wing coverts with brownish white tips ; beneath whitish faintly streaked brown. Young are like ♀ but slightly browner. The ♂ does not acquire the full carmine plumage after the first moult, but breeds in a dress not unlike that of ♀.

Breeds.—E. Prussia, Poland, Baltic Provinces, Finland, Russia to 65° N., east to Lower Volga and Urals, and south to 48°, also in W. Siberia. Partly migratory ; occurs in winter W. Europe to Spain, Britain (irregular visitor), Malta (rare).

PINICOLA.

Larger than "Carpodacus" ; upper mandible more curved ; frequent pine-woods chiefly ; cup nest in trees ; eggs sky blue, with greyish and black spots.

Pinicola enucleator enucleator (L.). PINE GROSBEEK. *Fr.* Dur bec vulgaire ; *Ger.* Hakengimpel ; *Swed.* Tallbit.

♂ Carmine, bases of feathers grey ; head, neck, and rump more brilliant ; back grey with carmine margins ; wing coverts tipped and secondaries margined white ; centre of abdomen, under tail and wing coverts grey. Bill horn brown, lighter below. Legs and feet dark brown. Wing ♂ 108-114, ♀ 104-109. Tarsus 21-22. Bill 13-14. ♀ orange or dull golden brown with grey bases. The ♂ has much the same plumage as ♀ until the second year moult.

Breeds.—N. Scandinavia (in Sweden south to 63°) and N. Russia. Occurs in winter to S. and W.: Hungary, N. Italy and S. France (occasional), Britain (rare), Volga (irregular).

LOXIA.

Bill compressed sideways, and mandibles cross, lower usually to left of upper; haunt pine forests, and nest high in conifers; eggs pale bluish white, marked chiefly at larger end with purple spots and dashes.

Loxia curvirostra curvirostra L. CROSSBILL. *Fr.* Bec-croisé; *Ger.* Kreuzschnabel; *Ital.* Crociere; *Swed.* Kryssnäbb.

♂ adult. Brick red, brighter on rump. Full red plumage not acquired until 3rd or 4th year, but birds breed in immature plumage. Bill, legs and feet brown. Wing ♂ 95-102, ♀ 91-98. Tarsus 15-18. Bill 17-18. Height of upper mandible at base 7.2-8.2. Breadth of lower mandible at base 10.8-11.4. ♀ Red replaced by greenish yellow; greyer in winter. Young: above brown, streaked with whitish or greenish yellow, beneath paler, abdomen whitish with yellow tinge.

Breeds.—Europe generally from Lapland and N. Russia south to Pyrenees, Mountain ranges of S. and C. Europe to Carpathians and Greece. Migrations irregular to S. and W.

L. curvirostra hispana Hartert. Bill long and slender, ♂ 18-19, ♀ 16-18. Height of upper mandible 7. Breadth of lower mandible 11.

Resident.—Spain.

L. curvirostra scotica Hartert. Bill thicker, upper mandible very long and overhanging, recalling "pityopsittacus." Wing ♂ 98-104, ♀ 94-99. Bill 16-17. Height upper mandible 8.2-8.6. Breadth lower at base, 12-13.6.

Resident.—Scottish Highlands.

L. curvirostra balearica (Homeyer). Short-winged. Bill short and thick with overhanging upper mandible. Wing 94-96 (H.).

Resident.—Majorca.

L. curvirostra polioynga Whitaker. Paler, greyer (especially on breast) than in typical form. Males in full crimson dress rare.

Resident.—Tunis and Algeria.

L. curvirostra corsicana Tschusi. Shorter-winged, ♂ 97-100, ♀ 93-98. Bill higher at base.

Resident.—Corsica.

L. curvirostra caucasica Buturlin. ♂ brighter red. Wing 92-100. Height upper mandible 7.2-8.

Resident.—Caucasus.

Loxia pityopsittacus Borkhausen. PARROT CROSSBILL. *Fr.* Bec-croisé perroquet; *Ger.* Grosser Kreuzschnabel; *Swed.* Större Korsnäbb.

Generally much larger than "curvirostra." Wing ♂ 104-108 (H.), ♀ 99-106 (W.). Bill very massive, depth at base 14-15.5, length 19-21, height upper mandible 9-10, breadth lower mandible 13-16 (H.).

Breeds.—Scandinavia and N. Russia to 64° N., south to Baltic Provinces and Poland. In winter, irregular in W. and Central Europe to Austria, N. Italy and Britain (rare).

Loxia leucoptera bifasciata (Brehm). TWO-BARRED CROSSBILL. *Fr.* Bec-croisé bifascié; *Ger.* Weissbindiger Kreuzschnabel; *Swed.* Bände Korsnäbb.

Resembles "curvirostra" but is smaller, and has two broad white wing bands, scapulars brown. Wing ♂ 89-96, ♀ 85-91. Bill 15-16.

Resident in pine forests of extreme N. Europe, flocking irregularly south through W. and Central Europe from Volga to Rumania, Hungary, N. Italy, Switzerland and France, Britain (rare).

In N. Russia and Siberia the red seems constantly brighter, paler and more pink. "L. l. elegans" Homeyer. A British specimen in Tring Museum appears to be of this form.

Typical "L. l. leucoptera" Gmelin is a N. American form, of doubtful occurrence in Britain; has smaller, finer bill, and brown on upper parts much darker.

FRINGILLA.

Bill straight and pointed; tail forked; cup nest in trees or bushes; eggs bluish or brownish ground colour, dark spotted.

Fringilla cœlebs cœlebs L. CHAFFINCH. *Fr.* Pinson; *Ger.* Buchfink; *Ital.* Fringuello; *Swed.* Bofink.

♂ Crown and hind neck slaty blue, back chestnut brown, rump and upper tail coverts yellowish green, median wing coverts and tips of greater white or yellowish white, margins of secondaries yellow; beneath, face, throat, and underparts reddish brown with vinous tinge, outer tail feathers mostly white. Bill (winter) pale horn with dark tip, (summer) leaden blue, paler below, with dark tip. Legs and feet pale brown. Wing ♂ 82-90, ♀ 76-84. Tarsus 17-19. Bill 9-10. ♀ olive brown, rump and upper tail coverts yellowish green; beneath greyish brown. Young like ♀.

Breeds.—Europe from N. Cape south to Mediterranean, in Russia south to about 52°. Partial migrant; occurs in winter Sicily, Malta, Corsica, Sardinia, and N. Africa (Morocco to Egypt).

F. cœlebs tyrrhenica Schiebel. Upper parts darker, dark brown on wings replaced by deep black.

Resident.—Corsica.

F. cœlebs spodiogenys Bonaparte. ♂ adult. Forehead black, crown, face, hind neck and part of scapulars pale slaty blue, back and rump green; beneath pale vinous buff, margins of wing coverts and quills pure white, flanks slate. Wing 93-96 (H.) ♀ as typical ♀, but paler.

Resident.—Tunisia.

F. cœlebs africana Levaillant. ♂ Crown darker slate and less white on inner secondaries than in "spodiogenys"; green on back darker. Wing 91-94 (H.).

Resident.—Algeria.

F. cœlebs koenigi Rothschild and Hartert. ♂ much darker above than "spodiogenys"; still less white on secondaries, $\frac{1}{4}$ — $\frac{1}{3}$ of feather only. Wing 85-90.5.

Resident.—Morocco.

F. cœlebs maderensis Sharpe. ♂ Crown and nape dark slate, upper parts green with slaty tinge on middle back; abdomen more vinous than in "tintillon."

Resident.—Madeira.

F. cœlebs tintillon Webb, Berthelot, and Moquin-Tandon. ♂ adult. Upper parts black, rump and upper tail coverts green; beneath, face, throat, and breast reddish buff, abdomen whiter with slight vinous tinge.

Resident.—Canary Islands (Tenerife, Gran Canaria, Gomera).

F. cœlebs moreleti Pucheran. Nearest to "maderensis," difficult to differentiate but rather less dark slate on back, and very little white on outer tail feathers.

Resident.—Azores.

F. cœlebs palmæ Tristram. ♂ most resembles "tintillon" but rump as well as back dark slate, throat only buff, remainder of underparts white with vinous tinge.

Resident.—Palma (Canary Islands).

F. cœlebs ombriosa Hartert. Differs from "palmæ," rump mixed green and slate, and buff on throat descending to chest.

Resident.—Hierro (Canary Islands)

Fringilla teydea teydea Webb, Berthelot, and Moquin-Tandon.

♂ Slaty blue, without perceptible black frontal band; wings black with slaty margins to coverts and quills; abdomen whitish. Wing ♂ 103-107. Tarsus 22. Bill 13-14. ♀ browner, smaller. Young like ♀.

Resident.—Tenerife (Canary Islands).

F. teydea polatzeki Hartert. Has a black frontal band; tips of wing coverts pure white. Wing ♂ 96-99.

Resident.—Gran Canaria (Canary Islands).

Fringilla montifringilla L. BRAMBLING. *Fr.* Pinson de Ardennes; *Ger.* Bergfink; *Swed.* Bergfink.

♂ summer. Crown, face, sides of and hind neck and back black, rump and upper tail coverts white; throat, breast, scapulars, and tips of some coverts bright orange rufous; beneath white. Bill blue black. Legs and feet reddish brown. Wing, ♂ 89-95,

♀ 82-88. Tarsus 18-20.° Bill 10-11. In winter, black is margined rufous, flanks heavily spotted black, and bill yellow with black tip.

♀ Above duller, browner, with dark centres, no black on head and back, sides of neck grey; beneath paler.

Breeds.—Norway, Sweden, Finland, N. Russia, east to Urals and south to Ufa Govt.; also across Asia to Kamtschatka. Migrates; in winter to S. and C. Europe, Britain, Mediterranean Isles, N.W. Africa (fairly common), Egypt (rare).

Has bred in Scotland and said to have bred in Germany.

MONTIFRINGILLA.

Like "Fringilla" but with a longer wing; mountain birds; nest in rocks or buildings; eggs white.

Montifringilla nivalis nivalis (L.). SNOW-FINCH. *Fr.* Pinson des neiges; *Ger.* Schneefink; *Ital.* Fringuello alpino.

♂ Crown and nape ashy, mantle brown, wing coverts and secondaries white; beneath buffy white, centre of throat black (obscured by white tips in winter). Bill black (in winter yellow with black tip). Legs and feet black. Wing ♂ 117-125, ♀ 114-123. Tarsus 21-22. Bill 13-14. ♀ bill in summer yellow with black tip.

Breeds.—Higher Mountains France, Spain, Switzerland, Italy, Austria, Hungary, Balkan Peninsula, Greece; descending to lower elevations in winter.

M. nivalis alpicola (Pallas). Crown and nape browner; bill longer and more slender. Wing 2.5 m.m. shorter. Bill in winter brown, yellowish below at base.

Resident.—Caucasus 10,000—14,000 feet in summer, lower in winter; also in W. Asia to E. Turkestan.

PETRONIA.

Sparrow-like Finches. Bill stout and conical; frequent rocky districts; food, seeds, insects, fruit; nest in holes in rocks, walls, trees; eggs resemble those of House-Sparrow.

Petronia petronia petronia (L.). ROCK-SPARROW. *Fr.* Moineau fou; *Ger.* Steinsperling; *Ital.* Passera lagia.

♂ Above brown, eyebrow and centre of head lighter, with

broad lateral stripes ; upper parts streaked, feathers buff on outer, dark brown on inner webs ; beneath pale buff with slight yellow tinge and faintly streaked ; a yellow throat spot ; tail with large white apical spots (conspicuous in flight). Bill yellow with brown tip. Legs and feet brownish yellow. Wing 93-100 (H.). Tarsus 18-20. Bill 10-11. ♀ somewhat resembles a ♀ House-Sparrow ; yellow throat spot fainter than in ♂. Young are paler and without throat spot.

Resident.—Russia to 64° N., C. and S. France, Switzerland, S. Germany, S. Europe, Hungary to Portugal. Accidental in Holland, Belgium, Malta, Azores.

P. petronia hellmayri Arrigoni. Darker, less rusty upper parts than typical form ; difficult to distinguish.

Resident.—Sardinia and Corsica.

P. petronia macrorhyncha Brehm. Lighter and somewhat longer billed ; white spot on outer tail feathers larger.

Resident.—Balkan Peninsula, Serbia and Dalmatia to Greece and Macedonia.

P. petronia barbara Erlanger. Head, lower back, rump, and tail coverts greyer ; paler below, and yellow spot very pale ; bill larger ; white spots on outer tail feathers much larger.

Resident.—N.W. Africa ; Tunis to Morocco.

P. petronia madeirensis Erlanger. Above darker than typical form, especially middle of head and rump ; beneath more grey brown, and lacking the faint yellow tinge ; smaller. Wing 90-97.5 (H.).

Resident.—Madeira and Canary Islands.

P. petronia exigua (Hellmayr). Like typical form, but more dusky grey above ; bill weaker.

Resident.—Estuary of Don, Caucasus, Armenia.

PASSER.

Bill short, thick, upper mandible curved ; nest in holes, or untidy ball in trees ; eggs white with brown spots.

Passer domesticus domesticus (L.). HOUSE-SPARROW.
Fr. Moineau ; *Ger.* Haussperling ; *Ital.* Passera oltramontana ;
Swed. Hussparf.

♂ Crown, ear coverts, nape, rump, and upper tail coverts ashy grey with broad chestnut stripe over eye meeting on hind neck ; back and scapulars chestnut streaked black, lesser wing coverts tipped white ; cheeks and sides of neck white ; beneath greyish white, chin, throat, and chest black, flanks not streaked. Bill (winter) brown, (summer) black. Legs and feet brown. Wing ♂ 72-82, ♀ 71-77. Tarsus 18-20. Bill 10-12. ♀ brown, darker on back and streaked black and yellowish brown ; no black on throat and chest. Bill brown.

Resident.—All continental Europe and British Isles, from about 68° N. to Mediterranean (in Italy only to N.), N. Morocco, Sardinia, Balearic Isles, Grecian Archipelago, and in W. Asia.

P. domesticus tingitanus Loche. Very like typical form, but grey feathers of head black at base, in spring head appears grey spotted black ; ear coverts less grey and washed buff.

Resident.—Tunisia, Algeria, Morocco.

P. domesticus alexandrinus Madarasz. Smaller than "domesticus," sides of head white strongly tinged brownish grey, crown and rump lighter.

Resident.—Egypt, Cairo to Alexandria.

P. domesticus niloticus Nicoll and Bonhote. ♂ Crown, hind neck, and rump slate grey ; back pale chestnut with buff margins ; a post-aural patch chestnut not meeting on nape. Wing 73-76 (H.).

Resident.—Nile Valley, Fayoum to Wadi Halfa.

Passer italiae (Vieillot). ITALIAN SPARROW.

♂ like "domesticus" but back almost entirely chestnut, eye stripe short, white ; crown and nape chestnut ; cheeks and ear coverts whiter ; flanks not streaked. ♀ as in ♀ "domesticus." Wing ♂ 75-79.

Resident.—Italy south of Alps, Sicily, Malta, Corsica, Crete, Bosnia, France (occasional), S. Switzerland, S. Tyrol.

Passer hispaniolensis hispaniolensis (Temminck). SPANISH SPARROW. *Fr.* Moineau espagnol ; *Ger.* Weiden-sperling ; *Ital.* Passera sarda.

♂ Crown, nape, and lesser wing coverts chestnut, last with white tips ; back black, some feathers tawny or white on outer web ; beneath, throat, foreneck, and breast black, flanks broadly streaked

black. After moult chestnut is tipped brown and throat tipped white. ♀ resembles ♀ "domesticus" but flanks are streaked. Wing ♂ 74-80. Tarsus 19-20. Bill 10-12.

Resident.—Canary Islands, N.W. Africa, Spain, Sicily, Italy north to Genoa, Balkan Peninsula and Asia Minor. Occurs in winter in S. France and Egypt.

P. hispaniolensis arrigonii Tschusi. Darker, black streaks on back broad. Wing ♂ 75-78 (H.).

Resident.—Sardinia, Corsica.

P. hispaniolensis maltæ Hartert. Like typical form, but flank streaks narrower or even absent. Wing ♂ 76-81.

Resident.—Malta and Sicily.

P. hispaniolensis brutius Fiore. Back as in typical form, breast greyish white, flanks very faintly streaked or not at all.

Resident.—S. Italy (Calabria and Tarento).

P. hispaniolensis fluckerigeri Kleinschmidt. Back browner, streaks on flanks wanting or very faint.

Resident.—S. Algeria.

Specimens are occasionally found in Spain with few or no flank streaks. "P. h. maltæ," "P. h. brutius," and also "P. h. arrigoni" and "fluckerigeri" may prove to be hybrids. In Malta examples with or without flank streaks occur.

Passer montanus montanus (L.). TREE-SPARROW. *Fr.* Friquet; *Ger.* Feldsperling; *Ital.* Passera mattugia; *Swed.* Piefink.

Sexes similarly coloured. Resembles "domesticus" but entire crown, nape and hind neck pale chocolate brown, cheeks and sides of neck white with a black patch on ear coverts, lesser and greater wing coverts white tipped. Wing ♂ 65-74, ♀ 64-68. Tarsus 16-18. Bill 8-10.

Breeds.—Britain, and Europe from 68°30' N. south to Spain and Sicily, Macedonia, and S. Russia. Partial migrant; occurs in winter Dalmatia, Albania, Greece, Malta, Sardinia, and Corsica; N. Africa (doubtful).

P. montanus volgensis Ognew. Upper parts greyer, not so red brown as "montanus"; crown darker, wings and tail greyer. Wing about 3 mm. shorter.

Breeds.—Volga Delta.

Passer simplex saharæ Erlanger. DESERT-SPARROW.

♂ Above silvery grey; lesser wing coverts white, greater and primaries dark with sandy tips, upper tail coverts creamy white, lores and throat black, sides of neck and underparts creamy white. Bill black (summer), yellowish brown (winter). Legs and feet brown. Wing 77-81. Tarsus 19-20. Bill 10 (H.). ♀ more sandy, less grey, lacks black lores and throat.

Resident.—Sandy deserts of N. Africa, Algeria to Nubia. Typical race "P. s. simplex" occurs in S. Nubia east to Berber.

EMBERIZA.

Bill short, more or less stout and conical, with a knob on palate; food, seeds, fruits, insects; cup nest on ground or in bushes or hole in wall; eggs reddish white, greyish white, or buffy grey, marked with dark blotches and spots, and usually with tortuous and angular lines or scribblings. The brighter colours of the summer plumage almost obscured after moult by buff or grey tips to the new feathers.

Emberiza calandra L. CORN BUNTING. *Fr.* Bruant-Proyer; *Ger.* Graumammer; *Ital.* Strillizo; *Swed.* Kornsparf.

♂ ♀ Above greyish brown, streaked; beneath creamy white spotted or streaked on throat, breast, and flanks; no white on tail. After moult darker and often yellowish on underparts. Bill yellowish, brown along top of culmen. Legs and feet yellowish brown. Wing ♂ 89-103, ♀ 83-101. Tarsus 24-26. Bill 10-12.

Breeds.—British Isles; Europe from S. Sweden to Mediterranean and Islands, N.W. Africa, Canary Islands, C. and S. Russia to Caucasus; also W. Asia. Partially migratory; occurs in winter in Egypt.

Various subspecies described are not satisfactorily separable.

Emberiza citrinella citrinella L. YELLOW HAMMER. *Fr.* Bruant jaune; *Ger.* Goldammer; *Ital.* Zigolo giallo; *Swed.* Gulsparf.

♂ Above olive brown with dark streaks, rump and upper tail coverts cinnamon, crown and face yellow with some green tips; throat yellow, traces of malar stripe (sometimes fully

developed) purple red ; underparts yellow, tipped olive green on breast, and sometimes purple red band in front of green ; flanks streaked purple brown. Bill blue-grey. Legs and feet brown. Wing ♂ 80-92, ♀ 80-89. Tarsus 18-19. Bill 9-10. ♀ Above darker with dark streaks on crown, paler yellow below with dark grey stripes on throat and upper breast and larger streaks on flanks.

Breeds.—British Isles, N. and C. Europe (in Norway to 70° N.) south to Pyrenees, N. Spain, Austria, Hungary, Macedonia, Bulgaria, and Montenegro. Partly migratory ; occurs in winter in Mediterranean, S. Spain (rare), Portugal, Italy, Sicily, Turkey, N.W. Africa (occasional).

***E. citrinella erythrogeus* Brehm.** Greyer and less olive on upper parts ; wing coverts, secondaries and tail feathers with paler margins.

Breeds.—E. Prussia, N. and C. Russia east to Urals and south to Caspian and Caucasus ; and in Siberia. Occurs in winter S. Russia to Italy.

***Emberiza leucocephala* Gmelin. PINE BUNTING.**

♂ Above reddish brown streaked with black, rump and upper tail coverts chestnut, crown grey brown, white in centre, face and throat chestnut, ear coverts white ; beneath, foreneck and abdomen white, chest and flanks pale chestnut with white tips. Bill brown, paler below. Legs and feet brown. Wing ♂ 90-95, ♀ 82-91. Tarsus 19-20.5. Bill from skull 10.5-12 (W.). ♀ Above greyer, ear coverts brown, no white on crown, rump chestnut, but none on face and little or none on throat. Much as ♀ "*citrinella*," but yellow replaced by white. Young much as ♀, rump chestnut, throat and breast pale buff, a faint reddish tinge on breast and flanks with dark streaks.

A Siberian bird which has occasionally occurred in Europe, from C. Russia to Fair Isle, Belgium, and France.

***Emberiza melanocephala* Scopoli. BLACK-HEADED BUNTING.**

♂ Crown and sides of head black (obscured by brown tips after moult) ; back, scapulars, and sides of breast chestnut ; upper tail coverts yellowish ; beneath bright yellow ; occasionally throat

more or less black, yellow sometimes extends round neck to form a collar. Bill dark brown, paler below. Legs and feet brown. Wing ♂ 92-99, ♀ 84-92. Tarsus 21-23. Bill 11-13. ♀ Above light brown with dark streaks, rump slightly yellow; beneath brownish buff, tinged with (sometimes quite) yellow. Young like ♀. Under tail coverts are yellow at all ages.

Breeds.—S.E. Europe; Greece to Dobrudscha and Balkan Peninsula west to Italy, especially Adriatic coast and Liguria. Also S.W. Asia. To W. and N. of breeding range only an occasional visitor. Migrates to S.E. and winters in India.

***Emberiza luteola* Sparman.**

♂ Head and throat orange cinnamon, back yellowish green, upper tail coverts and underparts yellow. Bill bluish-grey, at tip brown above, whitish below. Legs and feet brownish flesh. Wing 87-90. Tarsus 21. Bill 12-13 (H.). ♀ Above grey brown, striped black, rump and upper tail coverts tinged yellowish; beneath pale brown, lower abdomen and under tail coverts tinged yellow.

A S.W. Asiatic species; has occurred in Italy and Heligoland. "Often seen in Constantinople Market" (Braun).

***Emberiza aureola* Pallas. YELLOW-BREASTED BUNTING.**

♂ adult, summer. Above dark chestnut, median wing coverts white, forecrown, face and throat black; beneath yellow with dark chestnut gorget and flank streaks. In winter, black on head and throat is lost, and chestnut feathers are margined grey. Bill dark brown above, pale brown below. Legs and feet light brown. Wing ♂ 75-80, ♀ 70-74. Tarsus 20-22. Bill 9-11. ♀ Upper parts grey brown, with black streaks, crown with light mesial stripe, sides dark brown tinged chestnut, rump chestnut, median wing coverts dark brown, tipped dull white; beneath yellow (with grey brown tips after moult), with dark streaks on flanks and ill-defined gorget. Young like ♀ but no chestnut tinge on head or rump; breast streaked like flanks.

An Asiatic species whose summer range extends into N.C. and E. Russia from Northern Dvina south to 50°; in autumn occasional in W. and S. Europe, but chief migration movement is to the eastward.

Emberiza cirrus L. CIRL BUNTING. *Fr.* Bruant zizi; *Ger.* Zaunammer; *Ital.* Zigolo nero.

♂ summer. Crown (streaked black), neck, lesser wing coverts, rump, upper tail coverts and chest band olive green; back, scapulars (streaked), and sides of breast chestnut; lores, post-ocular stripe, and upper throat black; eyebrow, lower face, throat band, and abdomen yellow. Winter, black of throat hidden by grey tips to feathers, and upper parts generally duller. Bill dark above, bluish below. Legs and feet brownish. Wing ♂ 74-83, ♀ 72-80. Tarsus 18-21. Bill 8-11. ♀ Above more grey brown streaked, lesser wing coverts olive green, throat yellow, chest band duller green, breast yellow tinged cinnamon, abdomen yellow.

Breeds.—S. England, Belgium, France, S.W. Germany, Italy, Croatia, Balkans, S. Russia to Caucasus, Greece, Mediterranean Islands, Spain and Portugal, N.W. Africa (Tunis to Morocco); also Asia Minor. Accidental in Malta. Rare Egypt. Largely a resident bird.

Subspecies described are not considered separable.

Emberiza hortulana L. ORTOLAN. *Fr.* Bruant-ortolan; *Ger.* Gartenammer; *Ital.* Ortolano.

♂ adult. Above olive brown, striated; crown, face, sides of and hind neck, and chest greenish grey, throat and eye-rim yellow, abdomen cinnamon. Bill reddish flesh. Legs and feet brownish flesh. Wing ♂ 82-90, ♀ 79-87. Tarsus 19-22. Bill 9-11. ♀ duller, head less green and striated, throat yellow, sides of throat and chest striped. Young: brown striated; traces of yellow on throat and cinnamon on abdomen; almost indistinguishable from young "caesia," but throat whiter and less streaked.

Breeds.—Europe north to Arctic Circle and south to Mediterranean; Morocco; in Russia east to Urals, and south to Caucasus; also through N. Asia. Migrates; occurs on passage Britain, Malta, Sardinia, Tunisia, Algeria, and Egypt; has been found in winter in Abyssinia.

Emberiza buchanani Blyth.

♂ Above grey, browner and striated on mantle; scapulars cinnamon on outer webs; throat grey, breast and abdomen

cinnamon, no grey on chest. Measurements as in "hortulana," but wing usually about 2 m.m. shorter. ♀ throat brown.

An Asiatic species which has occurred in S.E. Russia ; Crimea, Orenburg, Caucasus.

Emberiza caesia Cretzschmar.

♂ Back and scapulars reddish brown with dark streaks ; crown, face, hind neck, and chest blue grey ; lores, eye-rim, and throat cinnamon-buff ; abdomen reddish cinnamon. Bill brown above, paler below. Legs and feet yellowish brown. Wing 83-86. Tarsus 20. Bill 19-20 (H.). ♀ duller, crown browner, throat and chest dull buff streaked with dark brown. Young : reddish brown streaked, with traces of cinnamon on underparts.

Breeds.—S.E. Europe ; Crete, Greece to Dalmatia, and through Asia Minor to Caucasus. Occurrence in Europe west of Dalmatia exceptional. Migrates to N.E. Africa and S. Arabia.

Emberiza cia L. MEADOW or ROCK BUNTING. *Fr.* Bruant-fou ; *Ger.* Zipammer ; *Ital.* Zigolo muciatto.

♂ Above reddish brown with dark streaks, lesser wing coverts grey, middle with white tips, rump and upper tail coverts chestnut ; crown (with dark shaft streaks), face, ear coverts, sides of neck, throat, and chest blue-grey ; lores, lateral crown stripe, post-ocular stripe surrounding ear, and a malar stripe black ; breast and abdomen pale cinnamon. Bill dull plumbeous. Legs and feet yellowish brown. Wing ♂ 76-85, ♀ 74-84. Tarsus 19-21. Bill 8-10. ♀ paler, duller, browner on crown, throat and chest with dusky tips. Young much as ♀, lesser wing coverts browner with grey tips.

Breeds.—S. Europe, north to Switzerland, S.W. Germany, Lower Austria and Transylvania ; also Asia Minor. Northern birds migrate. Rare visitor Britain, Holland, Belgium.

E. cia africana Le Roi. Paler on throat and abdomen, and grey on throat barely reaches to chest.

Resident.—N.W. Africa, Morocco to Tunis.

E. cia par Hartert. Above paler, less red ; tips of middle wing coverts reddish buff. Wing somewhat longer, 84-91.

An Asiatic race whose range reaches the Caucasus.

Emberiza cioides castaneiceps Moore.

♂ adult. Crown, face, and ear coverts chestnut, throat and eyebrow white, lores and malar stripe black; upper parts chestnut streaked black, rump and upper tail coverts chestnut; beneath pale buff, reddish band on breast. Wing ♂ 78-82, ♀ 73-76 (H.). Young as in "cia," but wing coverts tipped buff not grey.

An Eastern form of "*E. c. cioides*," the W. Siberian race. Has occurred once in England.

Emberiza rustica Pallas. RUSTIC BUNTING. *Ger.* Waldammer; *Swed.* Videsparf.

♂ Crown, face, and ear coverts black (in winter greyish tipped), post-ocular and occipital patch white; upper parts chestnut with grey margins and some black streaks on back; beneath white, chest band and streaks on flanks chestnut. Bill brown, yellowish below at base. Legs and feet flesh colour. Wing ♂ 75-83, ♀ 72-78. Tarsus 18-19. Bill 8-9. ♀ duller, browner with grey brown margins; nape, rump, and upper tail coverts chestnut; chest band incomplete.

Breeds.—N. Finland and N. Russia and across N. Asia. On migration occasional Sweden; casual visitor elsewhere in Europe, west to Britain, south to France, Italy and C. Russia.

Emberiza pusilla Pallas. LITTLE BUNTING. *Fr.* Bruant nain; *Ger.* Zwergammer; *Ital.* Zigolo minore; *Swed.* Dvägsparf.

♂ ♀ Above brown with dark streaks, lesser wing coverts brown; crown (banded on each side broadly with black), face and chin chestnut; beneath white, streaked dark brown. Bill dark brown above, light below. Legs and feet brown. Wing ♂ 68-74, ♀ 66-70. Tarsus 17-18. Bill 7-8.

Breeds.—N. Russia to 68° east of 30° E. and through Siberia. Occasional in autumn and winter from Scandinavia and Britain to Spain, Algeria, Malta, Turkey.

Emberiza striolata saharæ Levaillant. HOUSE BUNTING.

♂ Above reddish brown with darker centres on back; crown and throat greyish, streaked; lores and post-ocular stripe blackish; eyebrow white and narrow; breast and underparts cinnamon brown. Bill dark brown above, paler below. Legs and feet

brownish flesh. Wing 75-80. Tarsus 18-19. Bill 10-11 (H.) ♀ duller generally, head grey brown streaked, throat dull red brown.

Resident.—N.W. Africa; Tunis and Algeria, south of Atlas, Morocco, south and central parts.

The typical form "*E. s. striolata*" is W. Asiatic and is lighter in colour.

***Emberiza schœniclus schœniclus* (L.).** REED BUNTING. *Fr.* Bruant de Roseaux; *Ger.* Rohrammer; *Ital.* Migliarino de palude; *Swed.* Säfsparkf.

♂ summer. Above black with rufous margins, outer margins of wing coverts and secondaries chestnut; rump and upper tail coverts grey with few streaks; head and throat black, malar stripe joining nuchal collar white; beneath white, flanks slightly streaked brownish black. Bill dark brown. Legs and feet dull brown. Wing 74-83. Tarsus 19-20. Bill 7-8 long, 5-5.5 high, 4-5.5 broad. In winter, black of head and throat and white collar partially obscured by red or grey-brown tips, back and wings more chestnut. ♀ lacks black on head and throat and the white collar; crown chestnut, dark streaked; upper tail coverts rufous, streaked; ear coverts and malar stripe dark brown, former mixed with chestnut; eyebrow, face stripe, and throat creamy white and often some rufous feathers on chest. Wing 70-77. Bases of head feathers are black in all stages.

Breeds.—Britain; Continental Europe north to Finmark, and 68° in N. Russia south to N. Spain, Italy and N.W. of Hungary; also in Siberia. Migratory; occurs in winter over S. and S.E. Europe to Black Sea and N. Africa, Morocco to Egypt (in small numbers).

***E. schœniclus canneti* (Brehm).** Bill thicker and larger; upper and lower mandibles about equal in height, upper more curved than in "*schœniclus*." Bill about 9 m.m. long; height 5.5-6.5.

Breeds.—S.E. Europe; Hungary and Dalmatia through Balkan Peninsula to Greece; also Spain and Portugal. Occurs Egypt in winter.

***Emberiza tschusii tschusii* Reiser and Almasy.**

Like "*schœniclus*" but paler; margins of wings and back pale cinnamon; rump and upper tail coverts paler grey. Bill

thick, high, and comparatively short, 9-10 long, 6.5-8 high. Wing longer on average 77-80 (H.).

Breeds.—Delta of Danube to S. Russia and S.W. of Caspian Sea. Has occurred in Greece in winter. Accidental in Britain.

E. tschusii compiler Matthews and Iredale (*E. palustris* auct.). In plumage like "*schoeniclus*." Margins of wings and back chestnut. Wing ♂ 78-85 (W.).

Breeds.—Italy, Sicily, S. France, E. Spain. Accidental in Britain.

E. tschusii othmari Hartert. Darker above than "*tschusii*," less brown above than "*compiler*." Bill slightly larger than in "*tschusii*."

Breeds.—S. Bulgaria and Greece.

E. tschusii volgæ Stresemann. Longer winged, ♂ 81-87 (H.) and thicker billed.

Breeds.—Sarepta and Volga districts (Russia); occurs in winter Lenkoran district of Caucasus.

Emberiza pyrrhuloides pyrrhuloides Pallas.

Bill larger than in "*schoeniclus*" or "*tschusii*," thick and high; upper mandible higher than lower, point rounded. Above feather edges rusty yellowish grey, rump yellowish grey, unstriped; below white, rarely with indications of stripes. Larger. Wing ♂ 90-92. Tarsus 21-22. Bill, height 9-10.5 (H.).

Resident.—Caucasus, Caspian shores, and E. into Asia. Once occurred Heligoland.

E. pyrrhuloides reiseri Hartert. Bill as typical form; above much darker, edges of feathers rusty brown; rump darker grey, flanks narrowly striped. Wing 2 m.m. shorter.

Resident.—Thessaly.

Calcarius.

Hind claw nearly straight (as in Larks); wings more pointed than in "*Emberiza*." Cup nest, well hidden, on ground; eggs olive brown to greenish, with red brown spots and blotches, and thin dark hair lines and scratches.

Calcarius lapponicus lapponicus (L.). LAPLAND BUNTING. *Ger.* Lerchen-Spornammer; *Swed.* Lappsparf.

♂ adult, summer. Above black with tawny streaks, crown, face, throat, chest, and sides of breast black; eyebrow to nape yellowish buff; hind collar chestnut; white patches on nape and sides of neck; beneath white streaked black on flanks. Bill yellow, tip black. Legs and feet black. Wing ♂ 90-101, ♀ 82-93. Tarsus 20-22. Bill 8-10. In winter, much paler, chestnut and black obscured by tawny tips. ♀ Crown dark brown with tawny streaks, hind collar rufous, throat and fore-neck black with white tips. Young distinguished from those of "*P. nivalis*" by absence of white on wing and bases of throat feathers always black.

Breeds.—Scandinavia south to about 65°, N. Finland, Russia north of 60°, Waigatz, Nova Zembla, and in Arctic Asia and America. Migrates; in winter south to Central Europe, Britain, Iceland, C. and S. Russia, rare in Austria, N. Italy, and Switzerland.

PLECTROPHENAX.

Bill as in other Buntings, but without palate knob; hind claw curved; wings much longer; nest, cup in rocks or under stones or logs; eggs yellowish to greenish white with purple shell markings and red brown blotches and spots, rarely streaked.

Plectrophenax nivalis nivalis (L.). SNOW BUNTING.
Fr. Ortolan de neige; *Ger.* Schneeammer; *Swed.* Snösparf.

♂ adult, summer. Head, neck, wing coverts, secondaries, base of primaries and underparts white; mantle and primaries black. Bill black. Legs and feet black. Wing 102-117. Tarsus 21-23. Bill 8-10. In winter, light reddish brown above, some almost chestnut with some of same colour on head, throat and chest; beneath white; bill yellowish with black tip. ♀ summer. Crown and upper parts dull black with traces of whitish edges. Winter, duller than ♂, feathers above with black centres, wings and tail browner and with less white. Wing 96-109. Young: crown, back of neck and sides of head, and rump grey; back grey buff, streaked black; beneath, throat grey, breast and flanks grey buff, abdomen pale buff. Fully adult plumage not assumed till after second year.

Range in summer, circumpolar. Breeds in Europe, in Scandinavia south to 60°, N. Finland, Russia north of 65°, Iceland, Scottish Mountains (small numbers). Migrates; occurs in winter N. and C. Europe generally; few to Mediterranean shores, occasional N. Africa, Canaries, Madeira, Azores.

ALAUDIDÆ—LARKS.

Sides of tarsus covered with scutes; chiefly ground birds, rarely perching; good runners; most are good songsters, singing when soaring; nest on ground; eggs greyish to yellowish white, thickly spotted olive brown or ashy brown.

RHAMPHOCORYS.

Bill Finch-like, above much curved, cutting edge lower mandible toothed in middle; hind claw slightly curved.

Rhamphocorys clot-bey (Bonaparte). THICK-BILLED LARK.

♂ Above sandy grey, a white spot under eye, ear coverts and sides of neck black, with white spot in centre; secondaries tipped white (conspicuous in flight), tail feathers, except central pair, which are like back, white with black tips; beneath white with black spots (thickest in middle). Bill large and massive, sandy brown. Legs and feet sandy brown. Wing 123-127. Tarsus 24. Bill 18 long, 13-15 high at base (H.). ♀ somewhat smaller than ♂ and less grey above.

Resident.—N. border of Sahara, Tunis and Algeria to Libyan Desert.

MELANOCORYPHA.

Bill strong, high, compressed sideways; hind claw as long as hind toe, and straight.

Melanocorypha calandra calandra (L.). CALANDRA LARK. *Fr.* Calandre; *Ger.* Kalanderlerche; *Ital.* Calandra.

♂ ♀ Above grey brown with dark centres, secondaries tipped white; beneath white; large black patch on either side of neck, breast buff with dark streaks, flanks buff, under wing coverts and axillaries brownish grey, outer tail feathers pure white, remainder

white tipped. Bill dark above, yellowish below. Legs and feet light brown. Wing ♂ 120-135, ♀ 110-132 (W.). Tarsus 24-30. Bill 12-15.

Breeds.—S. Europe from Spain, S. France, Corsica, Sardinia, C. and S. Italy to Balkans, Rumania, S. Russia and Caucasus ; also N. and C. Tunisia, N. Algeria, Morocco, and Asia Minor to Palestine. Largely resident. Rare elsewhere in Europe and in Egypt.

Melanocorypha bimaculata (Ménétries).

Like "calandra," but no white tips to secondaries, outer rectrices dark brown, black patches on neck more confluent.

West Asiatic species ; occurs in Caucasus, and in winter in N.E. Africa.

Melanocorypha sibirica (Gmelin). WHITE-WINGED LARK.

♂ No black neck patches. Above grey brown, with dark central streaks ; crown, ear coverts, and wing coverts reddish chestnut ; inner primaries and apical half of secondaries white (conspicuous in flight) ; white stripe behind eye ; underparts white faintly spotted, flanks streaked brown. Bill brown, pale below at base. Legs and feet yellowish brown. Wing ♂ 115-125, ♀ 106-112 (W.). Tarsus 22-24. Bill 12-14. ♀ Crown brown with dark streaks like back.

A W. Asiatic species, ranging into Russia, north to Orenburg, Samara, Saratov and west to Voronetz. In winter, occurs in Rumania and Turkey. Rare in C. and W. Europe.

Melanocorypha yeltoniensis (Forster). BLACK LARK.

♂ Black, with whitish sandy margins above at all seasons, broader in winter, and then also on underparts and flanks. Bill brownish grey, yellow at base. Legs and feet grey-black. Wing 127-139 (W.). Tarsus 25. Bill 13-14. ♀ like "calandra," but lacks the neck patches ; axillaries and under wing coverts sooty brown. Wing 114-122 (W.). Young the same but with black blotches on underparts.

Breeds.—S. Russia, Kirghiz Steppes up to Volga, and in W. Siberia. Occurs in winter in Caucasus. Rare W. and C. Europe.

CALANDRELLA.

Bill short, conical; inner secondaries much lengthened; claws short; sexes alike.

Calandrella brachydactyla brachydactyla (Leisler).
SHORT-TOED LARK. *Fr.* Calandrelle; *Ital.* Calandrino.

♂ ♀ adult. Above sandy brown, with dark centres, crown very often rufous; beneath buffy white, a few dark spots on foreneck and a patch on each side of neck dark brown; inner secondaries very long, almost as long as primaries. Bill dark horn above, pale below. Legs and feet pale brownish. Wing, 4th primary shorter than 3rd, ♂ 88-95, ♀ 85-94. Tarsus 20-21. Bill 10-12. Young are spotted white above. Colour varies greatly according to colour of soil, being most rufous in Europe (Italy to Portugal) and a lighter red in N.W. Africa. In E. Europe the colour is greyer.

Breeds.—S. Europe, from Portugal and Spain through C. and S. France east to Rumania, Balkan Peninsula, Greece, Mediterranean Islands, S. Russia to Lower Volga, Urals, and Caucasus; also N.W. Africa and Asia Minor to Persia. Rare in Europe to north of above range. Migratory; occurs Egypt on passage and Sudan in winter.

C. brachydactyla hermonensis Tristram. A lighter and more rufous form with less conspicuous black markings, crown always reddish.

Resident.—Mid Morocco, S. Algeria (Hautes Plateaux to Oued Mya), S. Tunis, Egypt, Palestine.

C. brachydactyla longipennis (Eversmann). A greyer form without any rufous shade; eye-stripe whiter. Wing 3.5 m.m. shorter.

A West Asian race, which migrates S.W., occurring in Egypt, Greece, Algeria, and W. Sahara in winter; once in Britain.

Calandrella minor minor (Cabanis).

♂ Lighter and more sandy than "brachydactyla," and without neck patches; sides of throat, upper breast and sides of breast narrowly streaked; secondaries 15 m.m. shorter than primaries, flanks reddish buff slightly streaked. Bill dull horn,

paler at base below. Legs and feet pale brown. Wing 90-94. Tarsus 20-22. Bill 9-9.5 (H.). ♀ slightly smaller.

Resident.—N. Africa, Morocco to Cyrenaica, north of the desert. In winter, occasional in Italy and Malta.

C. minor rufescens (Vieillot). Above red brown with dark centres; beneath creamy white generally stained by red soil; spots on breast thicker and darker than in typical "minor," but less than in "apetzii" of Spain. Wing ♂ 88-91.5 (H.).

Resident.—Tenerife.

C. minor polatzeki Hartert. Smaller than "rufescens," paler and more sandy colour. Wing ♂ 87-88, ♀ 82. Tarsus 19. Bill 8.

Resident.—Canary Islands (Lanzarote, Fuerteventura, and Gran Canaria).

C. minor apetzii (Brehm). Darker and browner than typical form or "heinei"; throat and flanks as well as breast very boldly streaked.

Resident.—S. Spain (Andalusia to Valencia).

C. minor heinei (Homeyer). Resembles typical form, but greyer above, and flanks more streaked; also larger. Wing ♂ 95-100. Tarsus 21-22.5 (H.).

Breeds.—S. Russian Steppes north almost to Orenburg, and in Transcaspia. Accidental Italy and Malta. Egypt in winter.

C. minor nicolli Hartert. Darker and browner than typical form; bill dark horn grey.

Breeds.—Egypt (Nile Delta).

AMMOMANES.

Desert Larks: plumage soft, almost without spots.

Ammomanes deserti deserti (Lichtenstein).

♂ ♀ Above variable; sandy brown to brownish grey, redder on rump; upper tail coverts and margins of tail feathers, basal parts of outer webs and inner webs of quills cinnamon buff; beneath pale isabelline; throat white with faint dark marks; under wing coverts and axillaries cinnamon buff; secondaries

nearly all the same length ; 2nd primary much shorter than 3rd. Bill horn brown above, whitish below. Legs and feet light brown. Wing ♂ 99-103.5, ♀ 91-99. Tarsus 22-23. Bill 13-15.5 (H.). Young more yellowish above than adult and paler below, without any spots. All plumages are greyer when fresh and more rufous when worn.

Resident.—Egypt and Nile Valley, from Luxor southward ; occasional Cairo.

A. deserti algeriensis Sharpe. Above more reddish isabelline than typical form.

Resident.—Algeria and Tunisia south of Atlas, east through Tripoli and Libya to Lower Nile Valley north of Luxor.

A. deserti isabellina Temminck. Not so red as "algeriensis," rather redder than most "deserti."

Resident.—Lower Egypt east of Nile and upper Egypt south of Wadi Halfa.

A. deserti whitakeri Hartert. Above grey brown ; beneath sandy buff with obscure dark streaks, throat white with dark spots, under wing coverts and axillaries darker than in "deserti." Wing ♂ 104-106, ♀ 97-100. Bill 18-20.5 (H.).

Resident.—Djebel-Soda, Tripoli.

Ammomanes phoenicura arenicolor (Sundevall).

Like a small "A. d. algeriensis," but redder ; primaries pale cinnamon on both webs and black tipped, 2nd almost as long as 3rd ; secondaries pale cinnamon, inner much longer than outer ; tail feathers tipped black. Wing 92-97. Tarsus 21-23. Bill 11-11.5 (H.).

Resident.—Algerian Sahara (stony plains) east to Egypt (Nile Valley) and Palestine.

The typical form "A. p. phoenicura" is an Indian bird. Species is distinguishable from "A. deserti" by its long inner secondaries.

GALERIDA.

Crested Larks : feathers of crown long and pointed.

Galerida cristata cristata (L.). CRESTED LARK. *Fr.* Cochevis ; *Ger.* Haubenlerche ; *Ital.* Capillaccia.

♂ ♀ adult. Above greyish brown, centre of feathers dark; beneath buffy white or reddish buff with dark streaks or spots on foreneck and breast; under wing coverts and inner webs of primaries reddish, outer tail feathers brown with slight rufous tinge. Bill horn colour above, lighter below. Legs and feet straw. 1st primary 2-4 m.m. shorter than primary coverts. Wing ♂ 105-110, ♀ 97-109 (H.). Tarsus 25-28. Bill 14-17. Young are spotted above with small white and brownish spots.

Resident.—Europe from S. Sweden to S. France, Italy, Balkans, and S. Russia. Absent from Sardinia and Corsica. Very rare visitor to Britain.

G. cristata tenuirostris Brehm. Rather greyer than typical form. Bill very slender.

Resident.—S. Russia to Rumania.

G. cristata caucasica Taczanowski. Upper parts with very grey tinge as if powdered, especially in fresh plumage. Wing ♂ 106-110, ♀ 99-104 (H.).

Resident.—Caucasus and W. Shore of Caspian Sea.

G. cristata meridionalis Brehm. Darker than typical form with a rufous tinge, outer webs of outer tail feathers very rufous.

Resident.—Balkan Peninsula, Dalmatia, Greece, Crete.

G. cristata cypriaca Bianchi. Greyer at all seasons and less brown than typical form, spots on breast darker, bill rather longer and weaker.

Resident.—Greek Islands (Milos, Lemnos, Imbros), Cyprus.

G. cristata neumanni Hilgert. A very dark form, darker even than "meridionalis" and with rufous tail feathers.

Resident.—Roman Campagna.

G. cristata pallida Brehm. Above lighter in colour, feather margins paler. Wing 2-4 m.m. shorter.

Resident.—Spain and Portugal.

G. cristata kleinschmidti Erlanger. Darker above than typical form; beneath whiter, breast more distinctly streaked; size as "pallida."

Resident.—North Morocco (Tangier).

G. cristata riggenbachi Hartert. Larger than "kleinschmidti." Wing ♂ 107-113, ♀ 98-102 (H.). Beneath more isabelline or buff.

Resident.—Central and S.W. Morocco.

G. cristata macrorhyncha Tristram. Like "riggenbachi" but larger, paler, more sandy. Wing ♂ 110-116, ♀ 102-105 (H.).

Resident.—C. and N. Algeria south to Laghouat, Tunisia north of Atlas.

G. cristata randonii Loche. Darker than "macrorhyncha." Wing 115-117 (H.).

Resident.—Hautes Plateaux, Algeria.

G. cristata carthaginis Kleinschmidt and Hilgert. Browner than "randonii" and darker than "macrorhyncha." Smaller. Wing ♂ 109-113 (H.).

Resident.—N. Tunisia.

G. cristata nigricans Brehm. The darkest form of "G. cristata." Upper tail coverts inclined to rufous and streaked; underparts boldly streaked, as far as abdomen in some. Wing 102-106.

Resident.—Central portions of Nile Delta (dark soil), Damietta to Cairo.

G. cristata brachyura Tristram. Greyer and more sandy than "maculata," whiter beneath and bill longer. In winter and spring much bleached, especially on lower back and rump, and almost unrecognisable as the same bird.

Resident.—Egypt (Natron Valley, Lakes of north Delta, also near Ismailia) and S. Palestine.

G. cristata maculata Brehm. Breast spotting never so dense as in "nigricans," upper parts paler, less black in centre of feathers. Crest less black. Wing ♂ 98-108, ♀ 92-101. Bill ♂ 19-21, ♀ 18-20.

Resident.—Outer fringe of Egyptian Delta—down Nile to Wadi Halfa.

G. cristata moeritica Nicoll and Bonhote. Lesser upper wing coverts silvery brown; otherwise like "maculata."

Resident.—Fayoum, Upper Egypt.

Galerida theklæ theklæ Brehm.

♂ ♀ Resemble "cristata," but differ in 1st primary being as long as or longer than primary coverts, secondaries being much shorter in proportion to primaries, the bill shorter and proportionately thicker, breast less reddish and with narrower and more numerous streaks, and the under wing coverts and axillaries being less red, with a distinct grey tinge. Wing ♂ 97-104, ♀ 95-98. Tarsus 24-25. Bill 11-13.

Resident.—Spain south of Murcia, S. Portugal, Balearic Islands.

G. theklæ erlangeri Hartert. A dark form with streaks on breast darker and more copious, and descending lower on breast.

Resident.—N. Morocco.

G. theklæ ruficolor Whitaker. Resembles typical "theklæ" and "erlangeri" but browner, often very red, especially on underparts; rump and upper tail coverts dull cinnamon.

Resident.—Central and S. Morocco (Mazagan to Mhoilwa).

G. theklæ harterti Erlanger. A generally dark form, almost chocolate, frequenting black soil; occasionally barely distinguishable from "ruficolor" but rump generally less red. Wing ♂ 104-106 (H.).

Resident.—N. Algeria and Tunisia to the Atlas Mountains.

G. theklæ superflua Hartert. A sandy grey form, varying to rufous, with breast streaks brown, not black; not unlike "G. c. macrorhyncha" but with characteristic grey tinge of "theklæ" group on under wing coverts and axillaries. Wing 108-110.

Resident.—Algeria and Tunisia from south spurs of Atlas to Sahara.

G. theklæ deichleri Erlanger. A very pale isabelline form of "G. t. superflua," paler than "carolinæ," whiter beneath than "harterti"; occasionally resembles "G. c. macrorhyncha" but distinguishable by characteristics of "theklæ" group. Wing 97-102 (H.).

Resident.—Sandy deserts of S. Algeria south to about 32°, and S. Tunisia.

G. theklæ hilgerti Rothschild and Hartert. Upper surface pale sandy or greyish brown, very rarely varying to rufous as often as in "superflua." Wing ♂ 104-108 (H.).

Resident.—C. Algeria, south slopes of Atlas. In like districts in Tunisia represented by "superflua," and further south as far as Ngoussa by "deichleri."

G. theklæ carolinæ Erlanger. A very red and more cinnamon form of "superflua" but varying to grey, especially in the Sahara, where the grey form is said by Hartert to predominate.

Resident.—Stony Sahara of Tripoli, S. Tunisia, and S. Algeria between Laghouat and Ghardaia south to about 32°.

G. theklæ cyrenaicæ Whitaker. Mealy grey above as if powdered (Whitaker).

Resident.—Cyrenaica, and Sollum in Egypt.

LULLULA.

Tail very short; 1st primary distinctly visible, about 15 m.m. long; sexes alike; head slightly crested.

Lullula arborea arborea (L.). WOOD-LARK. *Fr.* Alouette lulu; *Ger.* Heidelerche; *Ital.* Tottavilla; *Swed.* Trädlärka.

♂ ♀ adult. Above reddish olive brown with black streaks and a white stripe behind eye; beneath dull yellowish white, streaked on foreneck and chest; conspicuous buffish white patch on side of wing; hind claw longer than in Skylark; crest rounded. Bill thin, dark brown above, paler below. Legs and feet pale flesh brown. Wing ♂ 91-101, ♀ 90-95. Tarsus 21-22. Bill 10-11. Young: above very rufous with white or buff tips and margins.

Breeds.—British Isles, and Europe north to S. Scandinavia, S. Finland, Russia to about 60° N., and east to Urals, south to S. Spain and Sicily, rare in Germany and Denmark. Migratory in colder parts of breeding range; occurs in winter Lower Egypt and N.W. Africa. Rare on passage in Malta.

L. arborea familiaris Parrot. Less red above, more greyish, especially on rump.

Breeds.—Corsica and Sardinia.

L. arborea flavescens Ehmcke. Edges of feathers lighter than in typical form, contrasting strongly with dark feather centres.

Breeds.—Greece, Macedonia, Rumania to S. Russia.

ALAUDA.

Bill stronger than in "*Lullula*," more slender than in "*Calandrella*"; 1st primary visible but very small; secondaries long, do not reach tips of primaries.

Alauda arvensis arvensis L. SKYLARK. *Fr.* Alouette des champs; *Ger.* Feldlerche; *Ital.* Lodola; *Swed.* Sånglärka.

♂ ♀ Above brown with dark centres and buff or tawny margins, crest slight; beneath whitish, throat spotted and chest streaked with brown, under wing coverts and axillaries greyish buff, two outer pairs of tail feathers all or partly white. Hind claw long and straight, longer than hind toe, 12-18, occasionally 22 m.m. long. Bill above dark brown, pale below. Legs and feet yellow brown. Wing ♂ 100-118, ♀ 97-106. Tarsus 24-25. Bill 9-11. In winter more rufous. Young: dark brown above with rusty edges and buffish white spots.

Breeds.—Europe generally except extreme south, in Scandinavia to about 70° N., in Spain south to Ebro, N. Italy, N. Hungary, Russia south to about 50°. Migratory; occurs in winter in S. Europe, Mediterranean Islands, N.W. Africa; many winter in C. Europe north to Britain and Baltic Sea.

A. arvensis cantarella Bonaparte. Margins of upper parts greyer, less brown; underparts whiter; as a rule smaller. Characters are not easy to elicit but it appears never to be so rufous in winter as typical form.

Breeds.—Italy, Corsica, Sardinia, and Sicily (Meinertzhagen).

A. arvensis cinarescens Ehmcke. Greyer and paler than "*cantarella*." Appears never to assume rufous plumage at any age or season. Generally smaller.

Breeds.—S.E. Europe, Balkans to Russia, also W. Siberia. Found in Palestine, Syria, and Egypt in winter, as well as in S.E. Europe.

A. arvensis harterti Whitaker. Not so dark as typical form, which occurs with it in winter. Bill longer and more slender.

Breeds.—N. Tunisia, N. and C. Algeria, Moroccan Atlas.

A. arvensis sierræ Weigold. Nearest "cantarella," rather blacker on upper parts; wing and tail average smaller and bill usually slightly longer.

Breeds.—Spain (Sierra Nevada), Portugal (Sierra da Estrella).

A. arvensis guillelmi Witherby. Bill longer than in "cantarella" or typical form; more black on upper parts and wings; dull white beneath with no buffish tinge. Wing 106-112 (H.).

Breeds.—N. Portugal.

ALÆMON.

Large as Thrushes. Bill long, slender, curved; 1st primary longer than coverts; hind claw short, straight.

Alæmon alaudipes alaudipes (Desfontaines).

♂ ♀ Above pale reddish sandy, paler on rump and upper tail coverts, greyish on head and nape; primaries dark brown, white at base; secondaries white with conspicuous black central band; beneath white or pale buff, chest spotted dark brown. Bill slaty grey. Legs and feet china white. Wing ♂ 118-130, ♀ 108-116. Tarsus 33-35. Bill ♂ 25-27, ♀ 21-24 (H.).

Resident.—Algeria, south of Atlas; C. and S. Tunisia; Tripoli, Cyrenaica, east to deserts of Egypt and Sinai.

A. alaudipes desertorum (Stanley). Like "alaudipes" but much greyer above.

Resident.—Red Sea Islands and Coast; desert between Cairo and Suez.

CHERSOPHILUS.

Nostrils covered with feathers; 1st primary only 10-12 m.m. long; hind claw slender.

Chersophilus duponti duponti (Vieillot).

♂ ♀ Above brown (occasionally rather rufous) with pale margins and buff edges; beneath white, tinged buff on breast, streaked dark brown on lower throat, breast, and flanks. Bill

dark brown above, lighter below. Legs and feet brownish flesh. Wing 91-100. Tarsus 13-14. Bill 17-19 (H.).

Resident.—N. and C. Tunisia, Hautes Plateaux of Algeria both sides of Atlas, Portugal, S. Spain (rare).

C. duponti margaritæ (Koenig). Upper parts pale sandy cinnamon; streaks on underparts reddish cinnamon. Bill longer, 23-26. In some cases examples of typical form approach this form in colour.

Resident.—Tunisia, south of Atlas, S. Algeria.

OTOCORYS.

In adult a tuft of elongated feathers (horns) on each side of crown.

Otocorys alpestris flava (Gmelin). SHORE LARK.
Fr. Alouette de la Sibérie; *Ger.* Ohrenlerche; *Ital.* Lodola gola gialla; *Swed.* Berglärka.

♂ adult. Above brown, vinous or rosy on occiput, hind neck, and upper tail coverts, with dark centres on back and scapulars; line at base of bill, forecrown, hornlets, cheeks and chest patch black; black of cheeks and chest separated by white; frontal band, throat and sides of neck yellowish white (deeper yellow in winter); beneath white, flanks rosy brown. Bill greyish horn with black tip and at base below yellowish. Legs and feet black. Wing ♂ 104-115, ♀ 100-107. Tarsus 21-24. Bill 8-10. ♀ generally duller and with smaller hornlets. Young: above black with straw-coloured spots; no hornlets.

Breeds.—Tundras of N. Europe and Asia, south to about 62° on Scandinavian Mountains above tree limit; Arctic Islands, Nova Zembla, Kolguev, Waigatz. Migrates; occurs in winter Middle Europe, Britain (in small numbers), rare Italy and Mediterranean; also occurs in S. Siberia to Amur and N. China.

O. alpestris atlas Whitaker. Generally like "flava" but reddish sandy above not rosy; wing coverts browner; occiput and hind neck more rosy, hornlets longer, nearly as long as in "penicillata"; black of cheeks and chest separated by white.

Breeds.—Atlas Mountains of Morocco.

O. alpestris bilopha (Temminck). Above sandy grey with no dark centres; no yellow tinge on forehead, throat, and sides of head, which are pure white; beneath white, flanks like the back; black of cheeks and chest separated by white. Wing 96-100 (H.). Young: reddish isabelline above, underparts white, rather resembling "*Ammomanes deserti*," but distinguished by white tips to tail feathers which are cinnamon in "*Ammomanes*."

Breeds.—Stony deserts of N. Africa, south of Atlas to Wadi Natron and Lower Egypt. Of accidental occurrence in S. Spain.

O. alpestris brandti Dresser. Forehead, throat and sides of neck white, rarely tinged yellow; hind neck and occiput greyish rose; back striped brown; black of cheeks and chest separated by white.

An Asiatic race which occurs in winter in E. Russia (Orenburg to Volga).

O. alpestris penicillata (Gould). Larger and greyer than "*flava*," less distinctly streaked, and rosy only on occiput and hind neck; hornlets long and incurved; forehead, throat, and sides of neck light sulphur yellow; black of cheeks and chest united. Wing ♂ 117-122 (H.).

Breeds.—Caucasus and Asia Minor.

O. alpestris balcanica Reichenow. Very near "*penicillata*," greyer in winter, and at same season yellow of head, neck, and throat deeper; in summer difficult to distinguish. Young: brown above with white tips; beneath white, with dark spots on breast.

Breeds.—Mountains of Balkan Peninsula.

The typical form "*O. a. alpestris*" is American and like "*flava*" but has a larger bill and browner wing coverts.

MOTACILLIDÆ.

Sides of tarsus covered by unbroken sheath; 9 visible primaries; inner secondaries lengthened, sometimes as long as primaries; bill thin.

ANTHUS—PIPITS.

Brown, more or less spotted; superficially resemble Larks; nest on ground; eggs like those of Larks.

Anthus richardi richardi Vieillot. RICHARD'S PIPIT.

♂ ♀ Above dark brown with rufous margins, wing coverts and secondaries broadly margined rufous (white in young), eyebrow pale buff; a black line under the eye and on sides of throat; beneath dull white, breast reddish buff, dark streaked; flanks brownish, slightly streaked. Bill dark brown, paler below. Legs and feet yellowish brown. Wing ♂ 92-100, ♀ 87-93. Tarsus 29-33. Bill 12-15. Hind claw 16-22.5, slightly curved and longer than hind toe.

An Asiatic breeding bird, frequently occurs Europe in autumn and winter; recorded Norway, Britain, Baltic south to Mediterranean, also Egypt.

Anthus campestris campestris (L.). TAWNY PIPIT.

Fr. Pipi rousseline; *Ger.* Brachpieper; *Ital.* Calandro; *Swed.* Fältpipilärka.

♂ ♀ Above grey brown, faintly streaked and with narrow rufous margins, margins broader on secondaries and wing coverts; eyebrow yellow buff; dark moustachial stripe sometimes present; beneath dull white, occasionally yellowish and generally with some dark spots on breast, flanks not streaked. Bill dark brown, paler below and towards base. Legs and feet yellow brown. Wing ♂ 87-98, ♀ 85-89. Tarsus 25-29. Bill 13-15. Young are more spotted on breast and feather margins are whiter.

Breeds.—S. Sweden, Denmark, Finland, C. and S. Russia south to lower Volga and Caucasus and through Europe south to Greece, Crete and Mediterranean countries; also N. Africa and W. Asia from Asia Minor to Afghanistan. Rare visitor N. France and Britain. Migrates; occurs in winter in tropical Africa, S. Arabia and N.W. India.

A. campestris griseus Nicoll. Like typical form but greyer above; bill about 3 m.m. shorter; underparts whiter and more streaked with brown on upper breast.

An Indian breeding race. Occurs Egypt in winter.

Anthus bertheloti bertheloti Bolle. CANARIAN PIPIT.

♂ ♀ Above grey brown, faintly streaked, rump not streaked; eyebrow white; beneath white (sometimes pinkish tinged) with

a band of dark spots on breast. Bill blackish horn, paler below at base. Legs and feet yellowish brown. Wing ♂ 75-80, ♀ 2-3 m.m. shorter. Tarsus 22. Bill 11-12. Young: wing coverts and secondaries have rufous margins.

Resident.—Canary Islands.

A. bertheloti madeirensis Hartert. Bill 1-2 m.m. longer.

Resident.—Madeira and Porto Santo.

Anthus pratensis (L.). MEADOW PIPIT. *Fr.* Pipi des prés; *Ger.* Weisenpieper; *Ital.* Pispola; *Swed.* Angpiplärka.

♂ ♀ Above greenish olive brown streaked with dark centres except on upper tail coverts; beneath white, buff tinged on breast, sides of throat as well as breast and flanks with dark spots or streaks, under wing coverts and axillaries whitish tinged yellow; 1st to 4th primaries nearly equal, 2nd, 3rd and 4th emarginate; hind claw slender, very slightly curved and longer than hind toe. Bill dark brown, flesh coloured below at base. Legs and feet pale brown. Wing ♂ 75-86, ♀ 72-82. Tarsus 20-22. Bill 10-12. In winter more olive above and more buff beneath.

Breeds.—Europe from extreme north, Kolguev, Iceland, Faroes and Britain south to Pyrenees, Italy, Transylvania, Rumania to Transcaspia and in W. Siberia. Migrates; on passage in Urals and Caucasus. Some winter S. Sweden, Denmark, Holland, British Isles, S. France and Hungary. Winters commonly Mediterranean basin and N. Africa. Rare in Canaries.

Anthus cervinus (Pallas). RED-THROATED PIPIT.

♂ summer. Darker than "pratensis" and lacks greenish olive colour; rump and upper tail coverts streaked; beneath, face, throat, and breast, pale chestnut or vinous buff; abdomen buffy white. In winter reddish colour beneath is generally lost, but is reacquired very early in spring and in some cases persists through winter but on throat only. Bill and legs as in "pratensis." Wing formula as in "pratensis"; ♂ 82-88, ♀ 80-84. Tarsus 20-22. Bill 10-12. ♀ summer: sometimes like ♂ but seldom with so much colour on breast and throat more buff. In winter throat whitish buff. Young like winter ♀ but rather more streaked breast and flanks.

Breeds.—Norway to Finmark, Lapland, N. Russia, and Arctic Islands, and in Siberia. Migrates on S.E. route through Sweden and Russia to Caucasus and E. Mediterranean. Rare on passage Britain and W. Europe, not common Algeria and Malta. Winters Egypt and N.E. Africa, and S. Asia to India and Malaya.

Anthus trivialis trivialis (L.). TREE-PIBIT. *Fr.* Pipi des arbres ; *Ger.* Baumpieper ; *Ital.* Prispolone ; *Swed.* Trädpiplärka.

♂ ♀ Resembles "A. pratensis" but larger, rump unstreaked, pale part of tail feathers pure white ; hind claw shorter than hind toe and curved ; 1st to 3rd primaries equal, 4th 4-6 m.m. shorter, 2nd to 4th emarginate. In winter more olive above and more buff beneath. Bill dark brown, pale below. Legs and feet pale flesh. Wing ♂ 84-90, ♀ 81-87. Tarsus 20-22. Bill 10-12. Hind claw 8.

Breeds.—Europe from Tromsö and N. Russia east into Asia, south to Cantabrian Mountains, N. Italy, Greece, Caucasus. Migratory ; winters in some Mediterranean countries, Egypt, N. Africa, and in tropical Africa. Accidental in Canaries and Madeira.

Anthus gustavi Swinhoe. PETCHORA PIPIT.

♂ ♀ Above reddish olive brown, streaked dark brown, upper back with buff streaks (white in winter) and margins of wing coverts white ; rump streaked ; beneath as in "trivialis" but pale part of tail feathers buffy not pure white ; 2nd and 3rd primaries emarginate. In winter more buff on underparts. Hind claw slender, slightly curved and longer than hind toe. Bill dark brown above, below lighter with dark tip. Legs and feet brownish flesh. Wing ♂ 82-85, ♀ 79-82 (H.). Tarsus 23. Bill 10-12. Hind claw 11.

Breeds.—N.E. Russia (Petchora) and Siberia east to Commander Islands, south to Altai. Occurs in winter on China Coasts. Migrates S.E.

Anthus spinoletta spinoletta (L.). WATER PIPIT. *Fr.* Pipi spioncelle ; *Ger.* Wasserpieper ; *Ital.* Spioncello.

♂ ♀ summer. Above greyish olive brown, with faint dark streaks, eyebrow whitish buff ; beneath dull buff with vinous tinge, unstriped ; tail, outer feathers white along outer web and

wedge of white on inner web, next white tipped. In winter, above more olive; beneath white broadly streaked on breast and flanks. Bill, summer, all brownish black; winter, dark brown, flesh coloured at base. Legs and feet dark brown. Wing ♂ 87-93, ♀ 82-89 (W.). Tarsus 22-24. Bill 12-13.

Breeds.—Mountains France, Spain, Germany, Switzerland, Austria, Hungary, Italy, Corsica, Sardinia, Balkans, Carpathians, Rumania; also Asia Minor. Winters in plains, especially in Mediterranean to Algeria and Tunisia. Casual in Britain.

A. spinoletta coutelli Savigny. Winter: paler and browner, more olive than typical form, striations more distinct, and rump more golden; beneath clear reddish buff streaked on breast. Summer: breast vinous, very slightly streaked.

A Persian breeding race, which occurs in winter in Egypt.

A. spinoletta blakistoni Swinhoe. Paler than typical form and also than "coutelli"; beneath as in typical form. Generally smaller. Wing ♂ 89-90, ♀ 81-83 (H.).

Breeds.—Central Asia. Occurs Caucasus in winter and also recorded Egypt, Port Said (Lynes).

A. spinoletta rubescens Tunstall. American Water Pipit. Recognisable in winter plumage by small size (wing ♂ 82-89, ♀ 78-82 (W.)), and darker buff underparts with smaller spots more confined to breast. Legs and feet very dark brown. Second outer tail feather has more white on inner web.

An American race, of rare occurrence W. Europe.

A. spinoletta caucasicus Laubmann. Wing ♂ 86-88 (H.). Lighter above than "spinoletta" but not so light as "blakistoni." Breast more grey yellowish than in "spinoletta," darker than "blakistoni."

Breeds.—Caucasus.

Anthus petrosus petrosus Montagu. ROCK PIPIT.

♂ ♀ summer. Above brown with slight green tinge and faint dark central streaks; beneath dull yellowish white with dark streaks; outer tail feathers smoky brown outer web. In winter much more olive green above and yellowish buff beneath. Bill in winter dark brown, flesh coloured below at base, in summer brown black. Wing ♂ 87-96, ♀ 84-90. Tarsus 23-25. Bill 13-15.

Breeds.—British Isles, Channel Islands and N. French Coasts ; also Coasts Norway and Islands as far as Varanger Fiord (Collett). Partially migratory, found in winter Atlantic Coasts south to France and Spain.

A. petrosus kleinschmidti Hartert. In winter like typical form but darker above and much yellower beneath ; summer plumage like winter, but bill entirely black.

Breeds.—Faroes.

A. petrosus littoralis Brehm. Scandinavian Rock Pipit. Indistinguishable from typical form in winter. In summer breast tinged reddish buff.

Breeds.—Coasts of Norway to White Sea. Found in winter south along N. European Coasts to N. France and British Isles.

MOTACILLA.

Tail long ; wings long and pointed, inner secondaries about as long as primaries ; frequenting open country, generally near water ; food, insects, crustacea, and mollusca ; nest on ground, holes in rocks, walls, etc. ; eggs generally greyish or buffy white, freckled or clouded with greyish or yellowish brown.

Motacilla flava flava L. BLUE-HEADED WAGTAIL. *Fr.* Bergeronnette printanière ; *Ger.* Gelbe Bachstelze ; *Ital.* Cutret-tola gialla ; *Swed.* Gulärla.

♂ summer. Above yellowish green, forehead, crown and nape bluish grey ; lores and ear coverts slightly darker with some white markings ; lines from bill above eye and below ear coverts white, chin often also partially white ; wing coverts with dull yellow tips ; beneath including throat yellow, occasionally orange, flanks and spots on sides of neck yellowish green. Bill, legs and feet black. Winter : browner, feathers of crown with green tips ; breast buff with some dark feathers ; stripes from bill tinged creamy. ♀ summer. Duller than ♂, some green on crown, occasionally a buff tinge on breast and a cluster of green spots on sides of neck. Winter : as ♂ but eye-stripe yellower, throat and breast paler and more buff, rest of underparts paler yellow. Wing ♂ 80-85, ♀ 76-82. Tail 70-79. Tarsus 22-25. Bill 11-12.

Young resemble winter adults but browner above, chin and throat white, eye-stripe buff and underparts darker buff.

Breeds.—N. and C. Europe, north to about 61°, south to Spain, Portugal, N. Italy, S. Russia, east to Urals (interbreeds with "beema" in Ufa Govt.), Caspian, Caucasus. Migratory; passes through S. Europe and N. Africa; some winter Morocco and Egypt but majority in C. and S. Africa. Accidental Faroes and Iceland. Regular but rare on passage Britain and has bred.

M. flava dombrowskii (Tschusi). Very close to typical form; crown, lores, and ear coverts darker, white eyebrow occasionally absent.

Breeds.—Rumania, Dobrudscha, Macedonia to Dalmatia. Occurs on passage Egypt, Palestine, Algeria. Winters in Africa.

M. flava beema Sykes. Summer: forehead and crown paler than typical form, lower parts of ear coverts whiter. Tail usually shorter, ♂ 67-71. Winter: crown greener and greyer, ear coverts greyer.

Breeds.—E. Russia, Orenburg, Ufa, and Samara Govts., and W. Asia. Casual in rest of Europe; recorded Britain, Germany, Rumania and Italy; also Tunisia. Winters E. Africa and India.

M. flava leucocephala (Przewalski). ♂ Top of head, ear coverts, lores, cheeks and chin white; hind neck smoky grey; otherwise resembles "beema."

A N. Asiatic breeding race. Has occurred E. Russia (Perm and Orenburg), and in Egypt and E. Africa on migration.

M. flava thunbergi Billberg. Grey-headed Wagtail. ♂ summer. Crown and ear coverts darker, latter almost black with no white admixture; eyebrow almost or quite absent; chin only white; green of upper parts darker. ♂ winter and ♀ distinguishable from typical form by dark ear coverts and no supercilium.

Breeds.—N. Europe from about 63° N. to tree limits, and in N. Siberia. Migratory; very rare on passage Britain, Faroes, W. and C. Europe; irregular Italy and Sicily; Greece and N.W. Africa not common; Egypt common especially spring; Caucasus, E. Russia (Orenburg and Ural Valley), very common. In winter E. Africa common, also occurs then in S. Asia (India to Philippines).

M. flava cinereocapilla Savi. ♂ Paler green than "thunbergi"; entire chin and throat white; differs from "flava" in ear coverts being generally darker with no white admixture and generally no eyebrow but a post-ocular white speck; occasionally bright saffron beneath. ♀ as in "flava" but ear coverts darker and more white on throat.

Breeds.—Italy, Sicily, Bosnia. Occurs on passage, Greece, Malta, Egypt (especially spring). Winters N. and tropical Africa.

M. flava iberiæ Hartert. Eyebrow distinct in front of and behind eye; otherwise like "cinereocapilla."

Breeds.—Spain, Portugal, Balearic Islands, S. France, Algeria.

M. flava rayi (Bonaparte). Yellow Wagtail. ♂ summer. Above (including crown and ear coverts) yellowish green; eyebrow, cheeks, throat, and entire underparts yellow; flanks greenish. Winter: upper parts browner, eye-stripe, chin, throat, and upper breast yellowish buff. ♀ summer: browner above than ♂, yellow on head duller and underparts paler. Winter: less green, more brown above than ♂, chin and throat almost white, breast more buff coloured and abdomen paler yellow. Young: 1st plumage; above red brown; beneath reddish buff with black marks on sides of crown and breast; 1st winter: above brown with green tinge; beneath, throat white, eyebrow, sides of neck, and chest buff; breast and abdomen pale yellow.

Breeds.—Britain, W. Holland, N.W. France, Heligoland (occasional), Portugal? Occurs on passage France, Spain, Morocco, Algeria, Tunisia. Winters S.W. Morocco and W. Africa.

M. flava campestris Pallas. ♂ summer. Crown and underparts brighter yellow than in "rayi," ear coverts almost pure yellow.

Breeds.—E. Russia (Samara, Ufa, Perm, Orenburg and Volga Govts.), Kirghiz Steppes, Caucasus. Winters in E. Africa, common in Kenya Colony.

M. flava pygmæa Brehm. A small race of "cinereocapilla." Wing 74.

Egypt resident; but some migrate.

Motacilla feldeggii feldeggii Michahelles. BLACK-HEADED WAGTAIL.

♂ summer. Above yellowish green; crown, face, ear coverts, nape and occasionally to upper back black; no eyebrow; entire underparts, chin to under tail coverts, yellow. Winter: crown and ear coverts fringed greenish brown. ♀ Crown black with some brown feathers. Wing ♂ 79-88. Tail 70-80. Tarsus 23-26 (W.). Bill 12-13. Some specimens have a yellow eyebrow ("M. xanthophrys" Sharpe), others, a white one ("M. paradoxus" (Brehm)). These both occur on spring passage in Egypt.

Breeds.—Balkan Peninsula, S. Russia to Astrakhan and Caucasus, and Persia and Asia Minor. Migrates; occurs on passage in Egypt; occasional Italy, Algeria, Tunisia; rare otherwise in Europe. Winters in N.E. Africa south to Kenya Colony and Uganda, and in Arabia.

M. feldeggii melanogrisea (Homeyer). ♂ Crown duller black, more ashy than in "feldeggii," chin and generally a line under ear coverts white; generally smaller. Wing 80-85. First winter: lacks olive green on upper parts and yellow on underparts in both sexes; general colour grey and white, eyebrow whitish, rump slate grey, underparts grey black (Ticehurst).

A W. Asiatic breeding race; rare on passage in Egypt, has occurred once E. Russia.

Motacilla citreola citreola Pallas.

♂ summer. Head, neck, and underparts yellow; on hind neck a black patch; back and scapulars ashy grey; wing coverts and secondaries brown with broad white margins. Bill, legs and feet black. Winter: browner, crown greyish green, forehead yellow, no black patch on hind neck. Wing ♂ 81-88, ♀ 78-83. Tarsus 24-26. Bill 11-13. ♀ in summer like ♂ in winter; in winter forehead greyish green. Young: dull grey, whitish beneath, chest slightly spotted; wing coverts with broad white tips.

Breeds.—N.E. Russia (White Sea to Ufa and Samara Govts.) and N. Asia. Winters S. Asia. Rare Egypt, Italy, Austria, Heligoland.

Motacilla cinerea cinerea Tunstall. GREY WAGTAIL. *Fr.* Bergeronnette jaune; *Ger.* Gebirgs-Bachstelze; *Ital.* Ballerina gialla; *Swed.* Grärla.

♂ summer. Crown and upper parts ashy with olive tinge, olive yellow on rump and upper tail coverts; eyebrow and malar stripe white; beneath yellow; chin and throat black with or without white tips; outer tail feathers white, next two pairs inner web and tip white, outer web black. Bill blackish, paler below at base. Legs and feet fleshy brown. Winter: eye-stripe buff, chin and throat pale buff, breast tinged ochreous. Wing ♂ 80-88, ♀ 78-85. Tail ♂ 98-104, ♀ 94-104. Tarsus 20-21. Bill 11-13. ♀ like ♂ but in summer chin and throat never so black and breast tinged ochreous; in winter breast more buff and below breast paler yellow.

Breeds.—From S. Sweden, C. and S. Russia, south of Gulf of Finland and British Isles through C. and S. Europe; also Atlas Mountains, N.W. Africa; W. Canary Islands, and Asia Minor. Accidental in Denmark and Faroes. Migratory in N. Europe, occurs in Egypt on passage and in winter, and in winter in E. and W. Africa.

M. cinerea melanope Pallas. Tail on average shorter, 88-99; in winter plumage, yellow often very intense and darker than in typical form.

An Asiatic race, whose breeding range extends west to Caucasus and Mountains of Perm and Ufa.

The length of tail on which "melanope" is chiefly founded is not very constant, but a character (shared also by a specimen from Canary Islands), which is more reliable is that in "melanope" the shaft of the outer tail feather is brown in the middle (6 specimens examined), while in typical "cinerea" it is entirely white (17 specimens examined); 2 birds (one an autumn migrant from St Kilda and one a spring migrant from Fair Isle) were the only European specimens with brown on the shaft of that feather.

M. cinerea schmitzi Tschusi. Above darker and greyer; lores black; ear coverts very dark; eyebrow and malar stripe indefinite or absent.

Resident.—Madeira and Azores.

Motacilla alba alba L. WHITE WAGTAIL. *Fr.* Lavandière; *Ger.* Weisse Bachstelze; *Ital.* Ballerina; *Swed.* Ringärla.

♂ adult, summer. Forecrown, face, sides of neck, and underparts white; occiput, nape, throat and chest black, the two latter separated from the black occiput and nape by white; upper parts pale grey, wing coverts and secondaries with pale tips and margins. Winter: throat white, with a crescentic black band across breast. Bill, legs and feet black. Wing ♂ 86-96, ♀ 81-90. Tarsus 22-25. Bill 10-12. ♀ as ♂ but in summer back browner, chin and throat less black and mixed with white, black of crown mixed with grey; in winter forehead grey, chin and throat dusky white, breast band not so deep black. Young: brownish grey above; beneath white with yellow tinge; crescent band on chest dark brown.

Breeds.—Continental Europe north to Iceland, Finmark, and N. Russia; east to Urals, south to Mediterranean. In Britain chiefly on passage but occasionally breeds. Migratory; winters in S. Europe, N. Africa, Madeira, Canaries, and farther south.

M. alba dukhunensis Sykes. Like typical form but back clearer grey, white on crown extends farther back, outer webs of greater and median wing coverts generally whiter.

A Siberian breeding race, whose range extends west to Caucasus, Volga and Urals. In E. Russia intermediates between this and typical "alba" are found ("intermedia" of Domaniewski).

M. alba personata Gould. Like typical "alba" but black of throat and neck united, ear coverts black.

Breeds.—S.W. Asia. Occurred once—England.

M. alba subpersonata Meade Waldo. Like typical form but lores black, black of throat partly united to that of crown, a white patch being left on sides of neck.

Resident.—Morocco (Wadi Moor-bey).

Motacilla yarrelli Gould. PIED WAGTAIL.

♂ adult, summer. Resembles "M. alba" but back as well as nape and crown black; rump black (in both sexes after first moult); flanks slaty grey. Bill, legs and feet black. In winter: black on back mixed with grey, on forebreast a black crescentic band. Wing ♂ 84-93, ♀ 82-89. Tarsus 23-25. Bill 10-12. ♀ is like ♂ but in summer black on breast not so extensive and back greyer; in winter, back greyer, flanks less

dark, wings browner. Young : grey above with greenish tinge, below white tinged with yellow.

Breeds.—S.W. Norway north to Bergen, S.W. Sweden (irregular), British Isles, Holland (rare), Belgium, N.W. France. Partial migrant ; occurs W. Coast Germany and Holland on passage and in winter S. France, Spain, Portugal and Morocco.

CERTHIIDAE.

Bill curved, nostrils free, no rictal bristles ; feet and claws strong ; primaries ten ; tail feathers twelve.

CERTHIA.

Small brown birds with stiff pointed tail feathers ; search bark for insects and larvæ ; nest in recess in tree trunk or between bark and trunk ; eggs white, spotted light red.

***Certhia familiaris familiaris* L.** TREE CREEPER.
Fr. Grimpereau ; *Ger.* Baumlauffer ; *Ital.* Rampichino ; *Swed.* Trädkrypare.

♂ ♀ Above yellowish brown with white central streaks, rump and upper tail coverts rufous ; quills from 4th with a yellowish bar ; beneath pure white with slight rusty tinge on abdomen and flanks, under wing coverts white. Bill dark brown above, pale below. Legs and feet pale brown. Wing ♂ 63-66, ♀ 60-62. Tail 60-65. Tarsus 15-16. Bill ♂ 13-14, ♀ 11-13. Hind claw 9 m.m. long.

Resident.—Norway to 69°, Sweden to Arctic Circle, Baltic Provinces, Russia to 65°, east to Urals and into Asia, Denmark, Germany east of Oder, Poland, Rumania.

***C. familiaris macrodactyla* Brehm.** Darker above (more brown, less white), rump darker rufous. Bill often longer.

Resident.—Germany west of Oder, Belgium, France (Alps and Vosges), Switzerland, Austria, Hungary, Czecho-Slovakia, Italy (Alps and Apennines), Sicily.

***C. familiaris britannica* Ridgway.** Rather redder than "macrodactyla" and darker, streaks on crown buff, central streaks of upper parts not so pure and reduced almost to shaft lines ; underparts not so pure white.

Resident.—British Isles.

C. familiaris corsa Hartert. Rather larger than "macro-dactyla," bill longer and streaks on back more sharply marked. Bill ♂ 15.5-16.5, ♀ 15-15.5 (H.).

Resident.—Corsica.

C. familiaris caucasica Buturlin. Under side less pure white, bill and legs darker, and bill and tail longer than in "familiaris." Bill 14-17. Tail 67-72 (H.).

Resident.—Caucasus.

C. familiaris buturlini Banjkovski. Is said to differ from typical form by longer bill and more intense colour of upper tail coverts; and from "caucasica" by its lighter colour (white and rufous) of upper parts and paler rufous upper tail coverts and base of tail. Wing ♂ 64-66. Tail 68-69. Bill 18-19 (H.).

Resident.—Crimea.

Certhia brachydactyla brachydactyla Brehm.

Above darker, less rufous and rump darker than in "C. f. familiaris" or "C. f. britannica"; abdomen and flanks reddish tinged; under wing coverts usually marked with dusky at base of first primary; under surface dirty white; outer web of 4th primary with distinct rusty yellow spot. Bill ♂ 15.5-19.5, ♀ 13.5-16.5 (H.). Culmen darker almost black. Hind claw short, 7.5 m.m.

Resident.—Holland, Belgium, France, Switzerland, below 1000 feet, C. and S. Germany especially in W., Austria.

C. brachydactyla ultramontana Hartert. Darker than typical, hardly any rufous except on lower back, rump and upper tail coverts; less red on flanks.

Resident.—S. Europe; Portugal and Spain, S. France, Italy, S. Dalmatia, Greece.

The Portuguese form has been named "lusitanica" (on account of streaks on head being finer) but does not appear separable.

C. brachydactyla mauritanica Witherby. Close to "ultramontana" but a darker bird, more mixed with black; darker rufous on the rump and pale streaks fewer and more buff.

Resident.—Morocco, Algeria, and Tunisia.

TICHODROMA.

Habits of "Certhia" but frequenting rocks instead of trees; tail soft, feathers not pointed; bill longer; claws powerful for rock climbing; nest in rock crevice; eggs white, finely freckled with dark red at larger end.

Tichodroma muraria (L.). WALL CREEPER. *Fr.* Grim-pereau de muraille; *Ger.* Mauerlaufer; *Ital.* Picchio muraiolo.

♂ ♀ Above slate grey (paler in winter), lesser and middle wing coverts and outer margins of primaries crimson; a white spot on inner web of primaries near the tip; beneath sooty grey, cheeks, throat and chest black (in winter throat and chest white). Bill, legs and feet black. Wing ♂ 93-110, ♀ 93-104. Tarsus 20-24. Bill ♂ 23-30, ♀ 23-28 (W.).

Breeds.—Alps and mountains of C. and S. Europe, Spain to Balkans, Carpathians, Caucasus and into Asia; occasionally strays from breeding places, *e.g.* to Baltic Provinces, Britain, Belgium, Sardinia, Malta, etc.

SITTIDAE.

Toes long and strong with powerful claws; tarsus short; tail soft, short; bill straight, wedge-shaped.

SITTA.

Small climbing birds; sexes nearly alike; food, insects and larvæ, corn, nuts, fruit; nest in crevices of rocks or holes in trees, entrance narrowed by plastered mud; eggs like those of "Certhia."

Sitta europæa europæa L. NUTHATCH. *Fr.* Torchepot; *Ger.* Kleiber; *Ital.* Picchiotto; *Swed.* Nötväcka.

♂ ♀ Above bluish slate; a black stripe through eye to nape; central rectrices like back, remainder black with subterminal white spots or band; beneath white, flanks and under tail coverts chestnut brown. Bill blackish horn above, whitish below. Legs and feet yellowish grey. Wing 78-91. Tarsus 17-20. Bill 18.5-19.5 (H.).

Resident.—Norway to 62° N., Sweden, Denmark (Zealand, Fünen), N. Russia to 60° N., east to Ufa and Samara. Irregular occurrence in Finland.

S. europæa homeyeri Hartert. Close to "europæa" but with a slight ochreous tinge on breast and abdomen.

Resident.—Baltic Provinces, E. Prussia, Poland.

S. europæa uralensis Gloger. Like "europæa" but smaller. Wing 80-84; beneath pure white with less chestnut on flanks and under tail coverts.

Resident.—Ural Mountains, Volga Plain, Ufa, N.E. Samara (where it meets "europæa") and S. Orenburg Provinces; east into Siberia.

S. europæa cæsia Wolf. Like "europæa" but darker above; chin, throat, cheeks, and ear coverts white; underparts cinnamon buff, with chestnut flanks and under tail coverts. Wing ♂ 75-79.

Resident.—Denmark (Jutland), Middle and S. Europe (except Sicily, S. Spain and Portugal).

S. europæa britannica Hartert. Like "cæsia" but generally paler beneath and chestnut of flanks paler. Wing ♂ 83-88, ♀ 80-86 (W.). Bill 15-16.

Resident.—England, Scotland (rare).

S. europæa hispaniensis Witherby. Resembles "britannica" in colour; is greyer on upper parts and less buff below than "cæsia." Bill shorter and blunter than in either.

Resident.—S. Spain and Portugal.

S. europæa atlas Lynes. Very similar to "cæsia" but bill conspicuously more slender, attenuate, base smaller. Feet and claws rather weaker. Wings ♂ average 87 (Lynes).

Resident.—Middle Atlas, Morocco.

S. europæa caucasica Reichenow. Very like "cæsia" but bill 2-3 m.m. shorter and blunter; an indistinct white line over black eye-stripe, ending in a spot behind the eye; shade of underparts variable as in "cæsia."

Resident.—Caucasus.

Sitta whiteheadi Sharpe.

♂ Above blue slate, crown and ocular stripe black, eyebrow white, the two latter extending to nape; beneath dull buffy white. Bill blackish, light blue at base. Legs and feet plumbeous. ♀ lacks black on head. Wing ♂ 72, ♀ 70.5. Tarsus 17. Bill 15-16 (H.).

Resident.—Corsica Mountains.

Sitta krüperi Pelzeln.

♂ Above blue slate, forecrown and head black, eyebrow, cheeks, and throat white; beneath pale slaty grey with a chestnut patch on chest, under tail coverts chestnut with white tips. Bill dark horn, lighter at base. Legs and feet slate grey. Wing ♂ 76-77, ♀ 71-73. Tarsus 17-19. Bill 15-16. ♀ forepart of crown only black.

Resident.—Caucasus to Asia Minor.

Sitta neumayeri neumayeri Michahelles. ROCK NUTHATCH.

Somewhat resembles "*S. europæa*," but no chestnut on flanks and under tail coverts and no white spots on tail; abdomen, flanks, and under tail coverts reddish buff. Bill blackish horn. Legs and feet blue grey. Wing 77-83 (H.). Tarsus 19-21. Bill 18-19. Sexes alike.

Resident.—S.E. Europe; Albania, Dalmatia, Herzegovina, and Croatia to Greece and Asia Minor.

PARIDÆ—TITS.

Skull comparatively large, bill short; plumage long and soft with a downy after-shaft; wing short. Sexes nearly alike.

PARUS.

Bill short, strong, conical; nares covered with feathers; of restless habits, searching branches, leaves, bark, etc., and in all attitudes; food, insects and seeds, but some omnivorous near dwellings; nest in holes in trees, walls, etc.; eggs white, spotted with dark or light reddish brown.

Parus major major L. GREAT TIT. *Fr.* Mésange charbonnière; *Ger.* Kohlmeise; *Ital.* Cincialleggra; *Swed.* Talgmees.

♂ Head black, cheeks white, and nuchal patch white tinged yellow; back yellow green; rump and upper tail coverts bluish grey; tail, outer webs blue grey, inner webs blackish, outer pair feathers white outer web and with patch of white at tip of inner web, penultimate pair with small white tip, third pair often tipped white; wing coverts blue grey with white tips; beneath

yellow, throat black and continuous with a broad black band down middle of breast and abdomen. Bill black. Legs and feet leaden blue. Wing ♂ 73-79, ♀ 70-76. Tarsus 18-20. Bill 9-10. ♀ like ♂ but duller, especially black of throat. Young have all white parts yellowish.

Breeds.—Continental Europe north to 67° in Norway, south to Mediterranean, Sicily, Balearic Islands, and in Siberia to 60° E. In winter occurs in Corsica, Sardinia, Corfu, rarely Malta, occasional British Isles, but is largely resident.

"*P. m. sulphureus*" (S. Dalmatia) and "*P. m. mallorcæ*" (Majorca) do not appear separable.

P. major newtoni Prazak. Bill more massive and conical, about 1 m.m. longer. Wing ♂ 74-78, ♀ 70-75.

Resident.—British Islands.

P. major excelsus Buvry. Bill intermediate between "*major*" and "*newtoni*." White on inner web of outer tail feathers much reduced, sometimes to a small spot, and generally absent on second pair.

Resident.—N. Tunisia, N. Algeria, Morocco, extreme S. Spain.

P. major corsus Kleinschmidt. Yellow paler, duller, white on outer tail feathers also much reduced. Wing shorter, ♂ 71-73. Bill as in typical form.

Resident.—Corsica, Sardinia.

P. major peloponnesus Parrot. Green on back duller than in typical form; yellow below paler.

Resident.—Greece, Crete, Greek Islands.

Parus cæruleus cæruleus L. BLUE TIT. *Fr.* Mésange bleue; *Ger.* Blaumeise; *Ital.* Cinciarella; *Swed.* Blåmes.

♂ ♀ Above yellowish green with a grey tinge, crown, wing coverts, outer margins of quills and tail feathers azure blue; forehead, cheeks and a line encircling the occiput white; a dark blue collar; throat black; greater wing coverts and inner secondaries with crescentic white tips; beneath yellow, with white in middle of abdomen and a black line down centre of breast. Bill black. Legs and feet plumbeous. Wing 64-69. Tarsus 17-18. Bill 6.5-7.

Breeds.—Continental Europe north to about 64° in Norway and 61° in Russia, east to Urals, south to Caspian, N. Caucasus and N. Spain; also Asia Minor. Resident. Accidental in Malta and Britain; in winter occurs Sardinia.

P. cæruleus obscurus Prazak. Darker and greener above; white tips of secondaries much smaller and not crescentic. Size less. Wing ♂ 60-65, ♀ 57-63.

Resident.—British Isles.

P. cæruleus ogliastræ Hartert. Above darker than typical form, yellow below duller; very like "obscurus" but tips of secondaries crescentic as in typical form. Wing ♂ 61-65 (H.).

Resident.—Sardinia, Corsica, Crete (Lynes).

P. cæruleus harterti Tratz. Very near "ogliastræ" but mantle darker and more bluish green. Wing ♂ 56-63, ♀ 57-62.

Resident.—Portugal and Spain except N.

P. cæruleus balearicus Jordans. Vent and lower breast very light, white with grey wash; back greyer than in "cæruleus" especially in ♀; forehead pure white. Wing ♂ 61-70, ♀ 64-68 (H.).

Resident.—Majorca.

P. cæruleus ultramarinus Bonaparte. Blue much darker, crown and collar almost black; back greyish blue, instead of green. Wing ♂ 63-67 (H.).

Resident.—N.W. Africa, Morocco to Tunis.

P. cæruleus teneriffæ Lesson. Generally darker than "ultramarinus" and has no white spots on secondaries and wing coverts.

Resident.—Tenerife, Gran Canaria, Gomera (Canary Islands).

P. cæruleus degener Hartert. Like "ultramarinus" but paler above, blue of head rather darker and yellow brighter.

Resident.—Fuerteventura and Lanzarote (Canary Islands).

P. cæruleus ombriosus Meade Waldo. Hind neck blue grey; back olive green, no white on abdomen; upper tail coverts greenish grey.

Resident.—Hierro (Canary Islands).

P. cæruleus palmensis Meade Waldo. Darker above and more slaty grey than "teneriffæ"; centre of breast and abdomen pure white; crown intense blue black.

Resident.—Palma (Canary Islands).

P. cæruleus orientalis (Sarudny and Loudoun). Paler than typical form; white tips to secondaries broader, blue also paler; below, yellow brighter and more white on abdomen.

Resident.—S. Russia, Orenburg, south to Uralsk, Kasan and Simbirsk.

"*Parus pleskii*" Cabanis found in N. Russia is a hybrid between "cyanus" and "cæruleus."

Parus cyanus cyanus Pallas. AZURE TIT.

♂ ♀ Crown and nuchal patch white; from lores through eye to nape runs a dark blue stripe, joining a dark blue collar; back and lesser wing coverts grey blue with white tips, greater coverts white with dark blue bases; outer rectrices white, inner webs grey at base; inner webs of inner secondaries white; beneath white, with a blue stripe down breast. Bill blackish horn, cutting edges pale. Legs and feet plumbeous. Wing 67-72. Tarsus 16. Bill 6-7.

Breeds.—E. Russia and W. Siberia. In winter ranges west to Baltic Provinces and Poland; exceptionally further west even to Holland and south to Austria and Rumania.

P. cyanus tianschanicus (Menzbier). Smaller than "cyanus." Wing 65, back slaty grey, outer tail feathers with more grey and less white than in "cyanus" and inner secondaries with less white on inner webs.

A Siberian breeding race which in winter ranges into east of Russia.

Parus ater ater L. COAL TIT. *Fr.* Mésange noire; *Ger.* Tannenmeise; *Ital.* Cincia mora; *Swed.* Svartmes.

♂ ♀ adult. Above bluish grey, greenish on upper tail coverts; median and greater wing coverts with white tips; lower face, sides of neck and nuchal patch white; beneath whitish, flanks, sides of abdomen and under tail coverts buff, under wing coverts and axillaries white. Bill black. Legs and feet leaden blue. Wing

♂ 60-65, ♀ 58-64. Tarsus 16-17 (W.). Bill 7-8.5. In young : white parts of adult pale yellow.

Resident.—Continental Europe north to 67.50° in Norway, C. and S. Sweden, N. Russia and in Siberia, south to N. Spain, Italy, Sicily, Hungary and S. Russia.

"*P. a. schwederi*" from Livonia is not considered separable.

P. ater britannicus Sharpe and Dresser. Slightly smaller. Above greyish olive, flanks and under tail coverts brownish buff. Wing ♂ 58-62, ♀ 56-62. Tarsus 16-18.

Resident.—England and Scotland, and N.E. Ireland (County Down).

P. ater hibernicus Ogilvie-Grant. Like "*britannicus*" but white parts deeply tinged yellow; rump, upper tail coverts, flanks and under tail coverts cinnamon. Wing ♂ 57-62, ♀ 56-60.

Resident.—Ireland, except N.E. (County Down).

P. ater sardus Kleinschmidt. Like "*britannicus*" as to size but upper back grey as in typical "*ater*"; lower back and rump greyish olive, flanks rusty brown.

Resident.—Corsica and Sardinia.

P. ater vieiræ Nicholson. Intermediate between "*ater*" and "*britannicus*"; mantle between grey and olive, rump olive brown, flanks and axillaries more golden buff than in "*britannicus*." Wing ♂ 60-65, ♀ 56-62.

Resident.—Spain and Portugal.

"*P. a. lusitanicus*" from Oporto does not appear separable.

P. ater atlas Meade Waldo. Close to "*sardus*" in colour of upper parts; beneath, black of foreneck extends over sides of breast and in fresh plumage breast is spotted white (these spots wear off later), flanks grey. Wing 66-69 (H.).

Resident.—Moroccan Atlas.

P. ater ledouci Malherbe. Lower face, sides of neck as well as breast and abdomen yellow at all ages (characteristic of young of other races and adult "*hibernicus*"); back grey with slight olive tinge, flanks greenish grey. Wing 65-68.5 (H.).

Resident.—N. Tunisia and N. Algeria.

P. ater moltchanovi Menzbier. Very near typical "ater" but back paler bluish grey, flanks almost uniform with abdomen. Bill longer, 10.

Resident.—Mountains S. Crimea.

P. ater prageri Hellmayer. Back dull grey more or less washed olive; rump and upper tail coverts brownish, inner flanks only rusty buff. Bill short and thick. Wing ♂ 66-70, ♀ 64-66 (H.).

Resident.—N. Caucasus.

Parus cristatus cristatus L. CRESTED TIT. *Fr.* Mésange huppée; *Ger.* Haubenmeise; *Ital.* Cincia col ciuffo; *Swed.* Tofsmes.

♂ ♀ Above brown with slight grey shade; crown crested, black with broad white margins; face and sides of neck white, mottled slightly black; a black crescentic band from behind eye, enclosing ear coverts; throat black, joined to black band from nape crossing sides of neck; beneath white, flanks tinged buff. Bill black. Legs and feet leaden blue. Wing ♂ 62-67, ♀ 59-65 (W.). Tarsus 18. Bill 7-8.

Resident.—Scandinavia, C. and N. Russia to about 64°, Baltic Provinces, south to Carpathians; occasional in Caucasus.

P. cristatus mitratus Brehm. Back browner than in "cristatus," the greyish tinge replaced by rusty; white of head tinged buff; flanks more rufous buff.

Resident.—Continental Europe from Denmark and Germany (except E. Prussia), south to Pyrenees and Cantabrian Mountains (N. Spain), Mountains of C. Europe, N. Italy, Balkan Peninsula, Rumania.

P. cristatus scoticus Prazak. Back much darker, more olive brown; flanks browner. Smaller. Wing ♂ 60-65, ♀ 58-64.

Resident.—Scotland (Spey Valley and E. Ross).

P. cristatus weigoldi Tratz. Back intermediate in colour between "mitratus" and "scoticus"; smaller than "scoticus." Wing ♂ 57-63, ♀ 56-59.

Resident.—Spain (except extreme north) and Portugal.

Parus cinctus cinctus Boddaert. SIBERIAN TIT.

♂ ♀ Crown and nape grey brown; scapulars, back and rump reddish brown; throat sooty black; face, sides of neck, breast, and centre of abdomen white; flanks and sides reddish buff. Bill brownish black. Legs and feet plumbeous. Wing ♂ 65-68, ♀ 65-66. Tarsus 16-18. Bill 7.

Breeds.—N. Scandinavia, south to Dovrefjeld in Norway, N. Russia, W. Siberia. In winter south to Moscow.

Parus lugubris lugubris Temminck. SOMBRE TIT.

♂ ♀ Above light brown, crown, nape, and throat black; cheeks and ear coverts white; underparts dull white, sides of breast and flanks tinged pale ashy. Bill dark horn. Legs and feet leaden blue. Wing 72-76 (H.). Tarsus 20. Bill 8-9.

Resident.—Istria, S. Hungary and Rumania to north parts Balkan Peninsula. Rare visitor to N. Italy.

P. lugubris lugens Brehm. Smaller than typical form. Wing 70-73 (H.). Crown duller and browner.

Resident.—Greece.

Parus palustris palustris L. MARSH TIT. *Fr.* Nonette; *Ger.* Sumpfmäuse; *Ital.* Cincia bigia; *Swed.* Kärrmes.

♂ ♀ Crown to hind neck black with blue gloss; back light grey brown, sides of head and neck white; tail square; beneath whitish, flanks, undertail coverts, and wing coverts washed with buff, centre of throat black. Bill black. Legs and feet leaden blue. Wing ♂ 65-67, ♀ 62-64 (H.). Tarsus 15-16. Bill 7-7.5.

Resident.—Norway north to 64°, S. Sweden, Baltic Provinces, E. Prussia.

P. palustris stagnatilis Brehm. Back browner, less grey. Bill larger, 7.5-8.

Resident.—Balkan Peninsula, Hungary and Galicia to S. Russia, Caucasus, and Asia Minor.

P. palustris communis Baldenstein. Darker brown above than "stagnatilis"; sides of head buff-tinged. Wing 65-67.5 (H.).

Resident.—Germany (except E. Prussia), Alps of Austria, W. Hungary, Holland, Belgium, France, N. Spain.

P. palustris dresseri Stejneger. Back darker and more rusty brown; flanks widely tinged with bright buff; rather smaller. Wing ♂ 59-65, ♀ 59-62.

Resident.—British Isles; rare in Scotland and Ireland.

P. palustris italicus Tschusi and Hellmayr. Nearest to "communis" but redder on upper parts, flanks, and sides of neck.

Resident.—Italy, Sicily, and Sardinia.

Parus atricapillus. WILLOW TIT. Typical form is American.

P. atricapillus salicarius Brehm. Differs from "P. palustris" in having no gloss on the black of head and throat, black extends further down on throat; back greyer and mixed with rufous; tail graduated, outer tail feathers shorter than others. Bill and legs as in "palustris." Wing ♂ 59-65, ♀ 57-60 (H.). Tarsus 16-17. Bill 7-8.

Resident.—Germany, Austria to the spurs of Alps.

P. atricapillus rhenanus Kleinschmidt. Very near "salicarius" but upper parts duller; face and ear coverts buffy white. Wing averages shorter, ♂ 58-63 (H.).

Resident.—Rhine Valley, north from Mainz to Holland and Belgium and west over France.

P. atricapillus kleinschmidtii Hellmayr. Darker and browner than "rhenanus," underparts rather redder, ear coverts more buff. Wing ♂ 58-62, ♀ 56-60.

Resident.—Scotland and England.

P. atricapillus borealis Selys-Longchamps. Above light grey brown, underparts whiter, crown sometimes brown tinged; face, ear coverts, and sides of neck pure white. Wing ♂ 63-68, ♀ 60-63. Tarsus 16-18.

Resident.—Scandinavia to N. Russia, Baltic Provinces and E. Prussia. In winter, south as far as Poland and Orenburg.

P. atricapillus assimilis Brehm. Like "borealis" but crown browner and bill longer and more slender; underparts more buff as in "rhenanus." Wing ♂ 66-69, ♀ 63-65 (H.).

Resident.—Carpathian and Transylvanian Alps; Mountains of Bosnia, Serbia, and Montenegro.

P. atricapillus bianchii (Sarudny and Härms). Resembles "borealis" but redder grey above; bill short and thick; flanks more buff.

Known only as a winter visitor to Pskov, Russia.

P. atricapillus montanus Baldenstein. Larger than all other forms, darker and browner than "borealis" and crown more mixed with brown. Wing ♂ 65-70 (H.).

Resident.—W. Alps, Switzerland.

P. atricapillus elenæ (Lowe). In size like "montanus" but darker. Crown deep dull black, black of throat more extensive, upper parts dark smoky grey with an olive brown tinge.

Resident.—N.W. Italy (Val Tournanche).

P. atricapillus baicalensis Swinhoe. Nearest "borealis" but back paler and greyer. Wing ♂ 65-70.

Resident.—N.E. Russia and through Siberia east to Japan.

AEGITHALUS.

Bill short and thick; tail long, graduated; plumage very soft; sexes much alike; habits as in "Parus"; nest oval, entrance on side near top, in bush or against trunk of tree; eggs white, faintly dotted red.

Aegithalus caudatus caudatus (L.). LONG-TAILED TIT. *Fr.* Mésange à longue queue; *Ger.* Schwanzmeise; *Ital.* Codi bugnolo; *Swed.* Stjårtmes.

♂ ♀ Head white, hind neck, middle line of back and upper tail coverts black; scapulars and rump rosy; secondaries white on outer web; beneath pure white, tinged rose on flanks and under tail coverts. Bill, legs and feet black. Wing ♂ 62-68, ♀ 62-67. Tail 88-100. Tarsus 16-18. Bill 4-5. Young: above dark brown, centre of crown white; beneath dull white, vinous on abdomen and flanks.

Breeds.—Scandinavia to near Arctic Circle, N. and C. Russia south to Ufa and Orenburg, E. and C. Germany, and N. Siberia. Chiefly resident; occurs in winter to Rumania and Caucasus, rarer in Belgium and France. Casual in Britain.

A. caudatus europæus (Hermann). White confined to centre of crown and spotted with brown; on each side more or less

developed black stripe ; across upper breast a row of brown spots (varying in intensity). Wing 60-67.

Resident.—Holland, Belgium, and France, through W. Germany, Switzerland, N. Italy, Bosnia, and Serbia to Rumania and Bulgaria.

A. caudatus roseus (Blyth). Centre of crown dull white much mixed with black ; lateral stripes black and broader, but not reaching the bill ; beneath dull white with row of dark spots more developed ; ear coverts with dark streaks ; smaller. Wing ♂ 58-63, ♀ 56-61. Tail ♂ 80-90, ♀ 72-87.

Resident.—British Isles, W. France.

A. caudatus taiti Ingram. Resembles "A. c. irbii" in having practically no rosy feathers on shoulders, but mantle very much blacker, only a few slaty feathers apparent on back ; sides of face and pectoral band very distinctly streaked with sooty blackish. Wing 59-60. Tail 76-83. Is much nearer "roseus" than "irbii."

Resident.—Portugal and N. Spain to Pyrenees.

A. caudatus irbii (Sharpe and Dresser). Back grey ; mantle with a few black feathers ; shoulder feathers faintly vinous ; centre of crown blackish. Wing 55-58. Tail 72-80.

Resident.—C. and S. Spain.

A. caudatus italix Jourdain. Distinguished from "irbii" by pale vinous colour of shoulders and foreback has more or less black.

Resident.—Italy.

A. caudatus tyrrhenicus Parrot. Nearest to "irbii" but back darker grey streaked with black ; white on crown narrow, lateral stripes very broad ; upper tail coverts and abdomen only vinous.

Resident.—Corsica.

A. caudatus siculus (Whitaker). Forehead and crown light brown, whitish median stripe ill defined ; entire back and rump grey, throat and upper breast white with a few dark feathers ; lower breast and abdomen whitish tinged pale brown ; flanks and under tail coverts vinous rose. Wing ♂ 57, ♀ 55. Tail 73.

Resident.—Sicily.

A. caudatus macedonicus (Salvadori and Dresser). Upper parts like "roseus" but black stripes on sides of head broader and reach to base of bill; lores black; throat with a dark patch as in "alpinus"; ring round eye orange red.

Resident.—Greece, S. Macedonia.

A. caudatus tauricus (Menzbier). Resembles "europæus" in having crown pure white in centre with little or no admixture of black and "roseus" in great amount of black on back and less vinous on scapulars; lateral crown stripes extend in front of eye but not so far as bill.

Resident.—Mountains of Crimea.

A. caudatus major (Radde). Like "sculus" but larger, forehead pale brown and sides of head brown; back grey as in "irbii." Wing 60-63 (H.).

Resident.—N. Caucasus.

A. caudatus alpinus (Hablizl) (tephronotus auct.). Allied to "irbii" but has an iron grey patch on throat, pale parts of head and throat brownish buff, underparts darker and more buff, ring round eye orange. Wing 58-61.5 (H.).

Resident.—Turkey (Constantinople district) and east through Asia Minor to Persia.

ANTHOSCOPUS.

Bill pointed and thin; plumage more compact than in "Parus" and "Aegithalus"; frequent damp localities; nest globular or purse-shaped, built on outer twigs of trees; eggs pure white.

Anthoscopus pendulinus pendulinus (L.). PENDULINE TIT. *Fr.* Mésange remiz; *Ger.* Beutelmeise; *Ital.* Pendolino.

♂ ♀ adult. Crown and hind neck dull white; frontal band, face, and ear coverts black; forecrown behind frontal band and upper back chestnut, rest of upper parts more ochreous; quills with creamy white margins; beneath buff, throat white, breast chestnut with buff tips. Bill horn black, pale on cutting edges. Legs and feet dark bluish black. Wing 55-59. Tarsus 15.5-16.5.

Tail 48-52. Bill 7-8. Young: brown (lacking chestnut and black), more cinnamon on back and wing coverts.

Resident.—Spain (S. and E.), Pyrenees, Rhone Valley, Provence, Italy, Sicily, Lower Austria, Hungary, Silesia (occasional), Poland, Balkan Peninsula to S. Russia and Asia Minor.

A. pendulinus caspius (Poelzám). Crown and mantle chestnut, hind neck creamy, white margins of quills broader.

Resident.—Shores of Caspian Sea, deltas of Ural and Volga Rivers north to Orenburg.

REGULUS.

Small size; bill thin and slender; nostrils with an operculum and partly covered by a single feather (one exception only, viz. "*R. calendula*"); frequent trees searching for insects; cup nest suspended under branch of conifer; eggs ochreous white with very fine brown dots.

Regulus regulus regulus (L.). GOLDCREST. *Fr.* Roitelet; *Ger.* Gelbköpfiges; *Ital.* Regolo; *Swed.* Kungsfogel.

♂ Frontal feathers greyish buff, crown yellow, orange in centre, with black lateral stripes; upper parts yellowish green, hind neck and mantle paler, more grey; beneath greyish white tinged yellow. Bill black. Legs and feet brown. Wing ♂ 52-56, ♀ 51-54. Tarsus 16-18. Bill 7-8. ♀ Crown yellow without orange. Young lack yellow on crown and black stripes.

Breeds.—Continental Europe generally, north to limit of firs, east to Urals, south to Pyrenees on west and in east to Mediterranean, Asia Minor, and Caucasus. Migratory in north; rare Spain, Portugal, and Malta; occasional Egypt; occurrence N.W. Africa doubtful.

R. regulus anglorum Hartert. Darker on back, more olive; slightly darker beneath; green on hind neck instead of grey. Wing ♂ 51-55, ♀ 49-53.

Resident.—British Isles.

R. regulus azoricus Seeböhm. Bill about 2 m.m. longer; above darker, more olive coloured.

Resident.—Azores.

R. regulus interni Hartert. Sides of head and hind neck grey ; colour of upper parts duller.

Resident.—Corsica and Sardinia.

R. regulus teneriffæ Seebohm. Black stripes on crown broader and united across forehead ; colour above darker (as in "anglorum"). Size smaller. Wing 50-51 (H.).

Resident.—Western Canary Islands.

Regulus ignicapillus ignicapillus (Temminck). FIRE-CREST. *Fr.* Roitelet triple bandeau ; *Ger.* Feuerköpfiges ; *Ital.* Fiorrancino.

♂ Frontal feathers more orange buff than in "R. regulus" ; lateral stripes meet in a band across the forehead ; supercilium white ; crown fiery orange with narrow border of yellow ; sides of neck golden green. Bill black. Legs and feet brown. Wing ♂ 52-54, ♀ 47-50. Tarsus 17-18. Bill 7-8. ♀ Crown all yellow.

Breeds.—Continental Europe south of Baltic, south to Mediterranean ; Sicily, N.W. Africa and Asia Minor. Mostly resident. Rare in Poland ; occasional in winter Britain and Holland ; accidental Denmark.

R. ignicapillus madeirensis Harcourt. Darker and greener above, frontal feathers whitish, crown yellow, no orange. Wing ♂ 55-57, ♀ 52-53 (H.).

Resident.—Madeira.

("R. i. minor" Parrot from Corsica is not considered tenable.)

PANURUS.

Nostrils covered with operculum ; bill pointed ; culmen curved ; tail long, graduated ; inhabit reedy localities ; nest deep cup low down among aquatic plants ; eggs white, sparsely covered with reddish brown scratches.

Panurus biarmicus biarmicus (L.). BEARDED TIT. *Fr.* Mésange barbue ; *Ger.* Bartmeise ; *Ital.* Basettino.

♂ adult. Fawn colour above, crown and face lavender, moustachial line black, wing coverts and secondaries with long black streaks and rusty white inner margins ; beneath, throat

and breast pinkish grey, middle of abdomen white, flanks light brown, under tail coverts black. Bill dark yellow. Legs and feet black. Wing 59-62. Tail 80-87. Tarsus 21-22. Bill 7.5. ♀ Crown dull brown, no moustachial stripe, back reddish brown with some broad black streaks (also occasionally on crown); beneath paler than in ♂ and under tail coverts fawn like flanks. Wing 55-62. Young are like ♀ but more streaked with black above.

Resident.—England (local), Holland, Belgium, W. and C. Germany; S. Europe from E. Spain through S. France and Italy to Greece.

P. biarmicus russicus (Brehm). ♂ much paler, especially on back; upper tail coverts pink tinged. ♀ very pale, no black streaks on back.

Resident.—Hungary, E. Galicia, Rumania, Bulgaria and S. Russia to Volga Delta and Caucasus and on through Asia to Manchuria.

LANIIDÆ—SHRIKES.

Bill powerful, hooked; upper mandible toothed; nostrils rounded, no operculum.

LANIUS.

Plumage of young above and below with wavy lines; these persist in many of females; perch in exposed positions; have the habit of impaling prey on thorns; cup nest in bushes, etc.; eggs white, varying to buff or pale green, spotted with brown of various shades, often in a zone.

Lanius minor Gmelin. LESSER GREY SHRIKE. *Fr.* Pie-grièche d'Italie; *Ger.* Kleiner Würger; *Ital.* Averla cenerina.

♂ ♀ adult. Above light grey; forehead and a band from lores to ear coverts black; wings black, primaries white at base, showing a speculum, 1st primary short, about as long as primary coverts; tail, two central pairs feathers black with white bases, remainder increasingly white to outer pairs, which are generally entirely white (shafts black); beneath white, breast, abdomen, and flanks tinged rosy colour. Bill, legs and feet black.

Wing ♂ 114-123, ♀ 113-122 (W.). Tarsus 24-26. Bill 13-14. Young: above grey brown with wavy bars, ear coverts dark brown, wing coverts brown tipped white; beneath creamy white, faintly barred on flanks.

Breeds.—C. and S. Europe (Spain very local; Germany sporadic except N.W.; Belgium rare) north to Baltic and Baltic Provinces, C. and S. Russia and across Siberia to Altai; Caucasus, Asia Minor, Sardinia, and Sicily. Migrates; occurs Egypt on passage; winters tropical Africa. Rare visitor to Denmark, Sweden, Holland, and Britain.

Lanius excubitor excubitor L. GREAT GREY SHRIKE.

Fr. Pic-grièche grise; *Ger.* Grau Würger; *Ital.* Averla maggiore; *Swed.* Större Törnskata.

♂ ♀ adult. Above light grey, whitish on scapulars; wing black, white speculum on primaries, or on both primaries and secondaries, tips of secondaries and inner primaries white, 1st primary half length of 2nd; narrow eyebrow white, band from lores to ear coverts black; tail, two central pairs of feathers black, remainder increasingly white to outer, which are entirely white; beneath white, slightly tinged rosy in autumn, occasionally also in summer. Bill, legs and feet black. Wing ♂ 108-116, ♀ 107-116. Tarsus 26-29. Bill 15-16. Young: duller, brown tinged above, speculum smaller or almost absent, breast with faint wavy bars.

Breeds.—N. and C. Europe, south to Pyrenees, Mountains of Venetia, S. Hungary, in Russia south to Moscow; and throughout W. Siberia. Occurs in winter British Isles, S.E. France, C. and S. Italy, Balkan Peninsula, S. Russia, Asia Minor and Caucasus. Rare visitor to Faroes, Mediterranean Islands and Spain.

L. excubitor homeyeri Cabanis. More white on forehead, supercilium, scapulars, tips of secondaries, and upper tail coverts; generally paler grey and intermediate with "*przewalskii*" of Central Asia. Wing 111-120 (H.).

Breeds.—Rumania, Bulgaria, S.E. Russia to Kirghiz Steppes and Caucasus, north to Orenburg and Moscow; also W. Siberia. In winter occasional in Greece; accidental elsewhere in C. and S. Europe.

L. excubitor przewalskii Bogdanow. Much paler even than "homeyeri," with more white on forehead, lores, supercilium and upper tail coverts; primaries half white; scapulars and secondaries with white predominating.

A C. Asian race, occurring west to Orenburg; once in Italy.

L. excubitor mollis Eversmann. A browner bird with a single speculum in wing; rump and upper tail coverts white with in autumn a rosy tinge, and beneath always traces of wavy bars.

A Siberian race, which occurs in winter at Orenburg (Grote).

L. excubitor meridionalis Temminck. Much darker grey above, speculum very small, white eye-stripe reaches base of bill; beneath rosy, tinged greyish. Wing ♂ 102-110, ♀ 103-108. Tarsus 30-31. Bill 15-16. Young: ashy brown above, below pale with indistinct wavy bars.

Breeds.—Spain and Portugal, S. France. Rare visitor Italy. Has occurred England and Heligoland.

L. excubitor algeriensis Lesson. Adult resembles "meridionalis" but bill stronger and underparts grey, not rosy; little or no eye-stripe; frontal band narrow and black, and more black on lesser wing coverts. Wing 104-112 (H.). In young wavy bars are hardly visible.

Resident.—N. Morocco, Algeria and Tunis, north of Atlas. Occurred once Italy.

L. excubitor dodsoni Whitaker. Resembles "algeriensis" but paler above; below, varies from grey to buffy white; black frontal band generally absent.

Resident.—C. and S. Morocco, and locally in Algeria and Tunis. Distribution is confusing. It appears to penetrate the area of "algeriensis" in W. Algeria, and extends along the Atlas as far as Tunisia, north of range of "L. e. elegans."

L. excubitor koenigi Hartert. Smaller than "dodsoni" and "algeriensis," rather darker than former and paler than latter. Bill longer and more slender. Wing ♂ ♀ 99-105 (H.).

Resident.—Canary Islands.

L. excubitor elegans Swainson. Paler grey than other N. African races, resembling typical form; speculum on primaries

often very large; secondaries mostly white; rump whitish; underparts very white. Some specimens have some black at base of bill and others have three outer pairs of rectrices entirely white.

Resident.—Algeria south of Atlas Mountains to Egypt, Sudan and Palestine.

Lanius senator senator L. WOODCHAT SHRIKE. *Fr.* Pic-grièche rousse; *Ger.* Rotkopfwürger; *Ital.* Averla capirossa.

♂ adult. Crown and nape chestnut; forehead, face, ear coverts, and upper back black; lower back grey; scapulars, speculum, upper tail coverts, and base of all but central rectrices white, base of central rectrices black; beneath buffy white. Bill, legs and feet black. Wing ♂ 92-99, ♀ 92-95. Tarsus 22-24. Bill 13-14. In ♀ black is replaced by dark brown. Young: grey brown, barred; scapulars, upper tail coverts, and underparts more buff with darker arrow-shaped marks; margins of secondaries reddish.

Breeds.—Continental Europe south of Baltic, Russia N. to Kaluga Govt., Caucasus, Sicily, Malta, N.W. Africa (Tripoli to Morocco) and south to 32° N. Migratory. Rare visitor to Denmark and Britain; occurs Egypt and Sahara on passage; winters tropical Africa.

L. senator niloticus (Bonaparte). Like typical form, but bases of central tail feathers white.

A W. Asiatic breeding race; occurring Egypt on passage, especially in spring; wintering S. Africa, S. Arabia. Cretan birds seem intermediate (Meinertzhagen).

L. senator badius Hartlaub. White speculum absent or minute in ♂, generally present but very small in ♀. Wing longer on average.

Breeds.—Corsica and Sardinia. Occurs on passage Tunisia and Algeria, and in winter W. Africa.

Lanius nubicus Lichtenstein. MASKED SHRIKE.

♂ Above black; forehead, supercilium, scapulars and speculum white; beneath white, reddish buff on flanks. Bill, legs and feet black. Wing 86-94. Tarsus 22-24. Bill 11.5-13 (W.). In ♀ black is of a brown shade. Wing 85-94. Young: grey brown, scapulars and underparts white, with dark wavy bars.

Breeds.—West Persia to Cyprus and Asia Minor, formerly in Greece. Occurs in Egypt on passage. Winters N.E. Africa and S. Arabia. Once occurred England.

Lanius collurio L. RED-BACKED SHRIKE. *Fr.* Écorcheur; *Ger.* Rotrückiger Würger; *Ital.* Averla piccola; *Swed.* Brunryggad Törnskata.

♂ Crown, nape, rump, and upper tail coverts grey; back, scapulars, and margins of wing coverts and secondaries chestnut; band from bill to ear coverts black; rectrices (except central) white on basal portion; beneath rosy white. Bill, legs and feet black. Wing 88-97. Tarsus 22-25. Bill 12-14. ♀ Above reddish brown, with or without faint bars, inclining to chestnut on mantle; beneath buffy white with dark arrow-head marks on breast and flanks. Wing 87-96. Bill horn brown. Legs and feet brownish grey. Young barred above and below with dark wavy lines.

Breeds.—England; Continent of Europe to about 64° N., east to Urals and south to N. Spanish Mountains and Pyrenees, Italy, Corsica, Sardinia, Greece, Asia Minor to Syria. Migrates; occurs on passage Shetland, Morocco, Sicily, Egypt; winters tropical Africa, south to Cape.

"L. c. jourdaini" Parrot from Corsica (duller chestnut on mantle) is not considered separable.

TELEPHONUS.

Straighter bill than "Lanius"; long 1st primary; tarsus longer; tail graduated; behind eye a small bare patch; swift runners; nest bulky, in tree or bush; eggs white, spotted and splashed with red brown and purplish grey.

Telephonus senegalus cucullatus (Temminck).

♂ ♀. Crown and band from bill to ear coverts black; broad eye-stripe white or buff; back brown, wing coverts and outer margins of quills chestnut; beneath grey; tail long, tipped white. Bill black. Legs and feet bluish grey. Wing 90-93. Tail 110-120. Tarsus 32-33. Culmen 22-24 (H.).

Resident.—N. Algeria and Tunisia; Morocco to S. Atlas Mountains.

AMPELIDÆ.

Feathers silky and rich ; crest loose and long ; wings long and pointed ; tail short and square ; allied to Shrikes and Flycatchers.

AMPELIS.

Frequent pine-woods, breed in colonies in uncertain places in north of Europe, Asia, and America ; wander at other seasons ; food, insects and berries ; nest in trees ; eggs pale blue or sometimes pale pinkish with pale purplish shell markings and black surface spots.

Ampelis garrulus garrulus (L.). WAXWING. *Fr.* Jaseur de Bohème ; *Ger.* Seidenschwanz ; *Ital.* Beccofrusone ; *Swed.* Sidensvans.

♂ Crested ; above grey brown ; lores, supercilium, and throat black ; tips of outer webs of primaries and of tail yellow ; tips of secondaries white with red wax-like tips to shafts ; underparts grey, reddish on breast and flanks ; under tail coverts chestnut. Bill black, paler at base. Legs and feet black. Wing 112-119. Tarsus 19-21. Bill 10-12. ♀ resembles ♂ but yellow at tip of tail narrower and paler and on primaries much paler ; wax tips of secondaries much reduced. Wing 110-119.

Breeds.—Circumpolar. In Sweden south to about 65°. Irregular as to breeding quarters and winter movements ; often in winter large numbers through Europe and British Isles, south to N. Italy. Accidental in Spain, Malta, Iceland and Faroes.

PYCNONOTIDÆ.

Thrush-like ; wings rounded ; 1st primary long. Mostly in Oriental and Ethiopian regions.

PYCNONOTUS.

Brown birds about 8" long, with some hair-like shafts on hind head ; sexes alike ; gregarious except in breeding season ; nest in bushes or low trees ; eggs greyish or pinkish white marbled and spotted with red or reddish brown surface spots and purplish grey shell markings.

***Pycnonotus barbatus barbatus* (Desfontaines).**

Dull brown above, darker on head and throat; beneath dull white, under tail coverts white, often (especially in ♂) tinged yellow. Bill, legs and feet black. Wing ♂ 104-107, ♀ 93-96. Tarsus 23-24. Culmen 21-23 (H.).

Resident.—Morocco, Algeria, and Tunis, north of Atlas Mountains. Of very doubtful occurrence in S. Spain.

***P. barbatus arsinoe* (Lichtenstein).** Head darker and upper parts paler; behind ear coverts a small white spot; under tail coverts white. Smaller. Wing 87-95 (H.).

Resident.—Middle and Upper Egypt; of sporadic occurrence near Cairo (Nicoll).

MUSCICAPIDÆ.

Includes Flycatchers, Warblers, Thrushes, Chats, and Robins. Wing of 10 primaries, 1st small; bill variable, rictal bristles generally present.

MUSCICAPA.

Bill wide at base; rictal bristles conspicuous; legs short and feet weak; nest open on wall or tree trunk, or in a hole; eggs pale bluish green unspotted or clouded or blotched with reddish brown.

***Muscicapa grisola grisola* L. SPOTTED FLYCATCHER.**

Fr. Gobe-mouche gris; *Ger.* Fliegenschnäpper; *Ital.* Pigliamosche; *Swed.* Grå Flugsnappare.

♂ ♀ adult. Above pale brown, crown dark streaked with white margins on forehead; beneath white, with dark brown streaks on breast and flanks; axillaries pinkish buff. Bill horn black, pale at base below. Legs and feet black. Wing 82-91. Tarsus 14-16. Bill 9-10. Young: spotted both above and below.

Breeds.—All Europe and British Isles, north to Finmark and Archangel, east to Urals, where it interbreeds with "*neumanni*"; south to Mediterranean and N. Africa, Tunis to Morocco (in Morocco south to 31°), Crete, Asia Minor. Migrates; occurs Egypt on passage, winters in tropical and S. Africa.

M. grisola neumanni Poche. Upper surface paler generally and streaks below distinct but fainter.

A Western Asiatic race whose range reaches the Caucasus. Has occurred in winter in E. Africa.)

M. grisola tyrrhenica Schiebel. Striations on crown and underparts less sharply defined.

Breeds.—Corsica and Sardinia.

M. grisola balearica Jordans. Breast striping less distinct than in "grisola" but not so faint as in "tyrrhenica"; white feather edges on crown broader.

Breeds.—Majorca (Balearic Islands).

Muscicapa atricapilla atricapilla L. **PIED FLY-CATCHER.** *Fr.* Gobe-mouche noir; *Ger.* Trauer-Fliegenfänger. *Ital.* Balia nera; *Swed.* Svart och hvit Flugsnappare.

♂ adult, summer. Above black; forehead white (5-6 m.m.), base of primaries and secondaries mostly white, forming a double speculum; 2nd primary equal to or slightly shorter than 5th; beneath white; almost always some white on outer web of two outer pairs of tail feathers (amount of white on rectrices is variable in all races, and occasionally absent). Bill, legs and feet black. Wing ♂ 76-83, ♀ 74-80. Tarsus 17-19. Bill 8-10. Winter: black above replaced by brown; white patch on forehead lost; upper tail coverts black, rump brown with some black feathers; tail and primaries brownish black. ♀ like winter ♂, but rump and upper tail coverts brown and tail dark brown. Young: dark brown above, with buff spots; beneath pale buff with blackish spots.

Breeds.—Europe north to E. Finmark, England, Scotland (local), Finland, C. Russia north to 60° and east to Urals, Perm, Ufa and Samara. In Holland, Belgium, N. and C. France, Spain, Austria, and Hungary chiefly on passage but some breed. Migratory; occurs on passage Balkan Peninsula, Portugal, Mediterranean generally, Asia Minor, Caucasus, Egypt and N.W. Africa. Winters in tropical Africa.

M. atricapilla speculigera Bonaparte.

♂ White on forehead greater in extent (7-9.5 m.m.); specula in wings larger and more visible in closed wing; generally no

white on outer margins of outer tail feathers ; 5th primary distinctly longer (5-7 m.m.) than 2nd.

Breeds.—N. and C. Algeria, N. Tunisia, Morocco ; Sierra da Estrella, Portugal (Witherby).

M. atricapilla semitorquata Homeyer. White of throat extending round sides of neck but not meeting ; some white on outer webs of three outer pairs of rectrices. Wing 81-84 (H.).

Breeds.—Greece, Asia Minor to Caucasus and Persia.

Muscicapa albicollis Temminck. COLLARED FLY-CATCHER. *Fr.* Gobe-mouche à collier ; *Ger.* Halsbandfliegenfänger ; *Ital.* Balia del collare ; *Swed.* Halsbands Flugsnappare.

♂ like ♂ "*atricapilla*" but white from throat continued round hind neck to form a collar ; 2nd primary usually longer than 5th, rarely equal, very exceptionally shorter ; rump white ; white forehead spot as large as in "*speculigera*." Bill, legs and feet black. Wing ♂ 80-85, ♀ 78-82. Tarsus 16-18. Bill from skull 9.5-11 (W.).

Breeds.—Gothland Island, Silesia, Galicia, Austria, Hungary, Carpathians, W. and S. Germany, S. Russia, north to Kiev and Kasan Govts., Italy especially N., Sardinia (uncommon), Spain and Portugal (rare). Migrates ; occurs on passage Switzerland, N.E. Germany, Sicily, Malta (rare), Greece, Asia Minor, Egypt, Tripoli, Tunisia. Winters C. Africa. Casual in Britain.

Muscicapa parva parva Bechstein. RED-BREASTED FLYCATCHER. *Fr.* Gobe-mouche rougeâtre ; *Ger.* Zwergfliegenfänger ; *Ital.* Pigliamosche pettirosso.

♂ adult. Above brown, greyish on face and sides of neck ; chin, throat, and upper breast reddish orange ; breast and abdomen white ; tail white, two central pairs and apical third of other tail feathers dark brown. Bill brown. Legs and feet dark brown. Wing ♂ 67-72, ♀ 64-70. Tarsus 17-18. Bill 7-8. ♀ Orange throat and upper breast replaced by buff ; grey on head and neck by brown.

Breeds.—Central Russia, north to Baltic Provinces, east to Orenburg and W. Siberia ; Finland, Germany (except W.), Poland, Denmark (irregular), Austria (very rare), Carpathians, Rumania, Bulgaria, Caucasus. Migrates. On passage Asia Minor and Egypt chiefly in autumn, rare in Greece ; occasional in W. Europe. Occurs in winter in N.W. India.

Muscicapa latirostris Raffles.

♂ ♀ Above brown, with white streak at base of bill and white ring round eye; beneath white, slightly streaked pale grey on breast and flanks; axillaries buff. Bill black, yellow at base below. Legs and feet black. Wing 67-74 (W.). Tarsus 13-14. Bill from gape 13.5-14.5.

An E. Asiatic species; occurred once in England.

PHYLLOSCOPUS.

Active little birds, mostly greenish above; habits much as in Flycatchers; insectivorous; nest, on or near the ground, semidomed with side entrance; eggs pure white or white with red or purplish spots chiefly at larger end.

Phylloscopus collybita collybita (Vieillot). CHIFF-CHAFF. *Fr.* Becfin vélocé; *Ger.* Zilpzalp; *Ital.* Lui piccolo.

♂ ♀ Above olive green, brighter on rump; supercilium yellow; beneath including underwing coverts, axillaries and edge of wing pale yellow. Wing formula: 1st primary 5-9 m.m. longer than coverts, 2nd primary between 7th and 8th or equal to 8th, sometimes between 8th and 9th; emarginate 3rd, 4th, 5th, and 6th primaries. Bill horn brown, paler at base below. Legs and feet dark brown. Wing ♂ 55-63, ♀ 52-57. Tarsus 19-21. Bill 7-8. After autumn moult colours are brighter.

Breeds.—British Isles, Holland, Belgium, S.E. Jutland, France, Switzerland, W. Germany, Mountains of Italy and in Liguria, Spain and Portugal, Sardinia, and probably also in N.W. Africa. Winters Mediterranean countries, and Egypt to tropical Africa; occasionally Britain, S. France, S. Switzerland.

P. collybita abietinus Nilsson. Similar in colour to "collybita" after autumn moult; paler, more greyish above in spring and summer. Wing longer, ♂ 62-66, ♀ 59-66. Tarsus 19-21. Bill 7-8.

Breeds.—N. and E. Europe; Norway to Arctic Circle, C. and N. Sweden, Denmark, Finland, C. Russia north to 65°, east to Perm and Orenburg, Baltic Provinces, E. Prussia, Poland, south through Austria to Rumania, Bosnia, and Montenegro. Migration route more to east than typical "collybita"; occurs regularly

British Coasts on passage, but more common E. Mediterranean, where many winter, *e.g.* Asia Minor, Egypt.

P. collybita tristis Blyth. Greyer, less green above ; axillaries and under wing coverts yellow as in typical form, but underparts lack yellow, and are pale buff ; supercilium buff. Legs black. Wing ♂ 60-67, ♀ 55-62. Tarsus 18.5-20. Bill 7-8.

Breeds.—N.E. Russia (Petchora), south to Urals (Perm) and in Siberia to Lake Baikal and Altai Mountains. Occurs on passage in E. Russia, Caucasus and S.E. Europe (some winter) ; rare in Italy ; accidental Heligoland, a few annually British Isles. Winters chiefly in India.

P. collybita canariensis Hartwig. Darker above, olive brown ; and much browner beneath at all seasons than typical form. Wing much rounded, ♂ 53-56, ♀ 48-50 (H.) ; 3rd primary shorter than 4th and 5th ; 2nd primary shorter than 8th.

Resident.—Western Canary Islands.

P. collybita exsul Hartert. Still smaller than "canariensis." Wing ♂ 50-52, ♀ 47-48.5 (H.) ; the very brown shade on underparts less pronounced or almost absent.

Resident.—E. Canary Islands (Fuerteventura and Lanzarote).

These races from Canary Islands and "P. c. tristis" never appear to get greener after autumn moult as does the typical form.

Phylloscopus neglectus lorenzii (Lorenz).

Much resembles "P. collybita tristis" but upper parts are dark rusty brown ; under wing coverts, axillaries, and edge of wing not pale yellow, but whitish buff. Primaries emarginate 3rd to 6th. Wing ♂ 62-63 (H.).

Breeds.—Caucasus. Winters in Transcaucasia.

The typical form "P. n. neglectus" (paler above and shorter winged) breeds in Transcaspia.

Phylloscopus trochilus trochilus (L.). WILLOW WARBLER. *Fr.* Pouillot-fitis ; *Ger.* Fitis-Laubsänger ; *Ital.* Lui grosso ; *Swed.* Löfsångare.

♂ ♀ Above greyish brown, tinged green ; supercilium yellow ; beneath dull white tinged yellow ; under wing coverts and axillaries yellow. 2nd primary between 5th and 6th ; primaries emarginate

3rd to 5th; 1st primary 3-6 m.m. longer than coverts. Bill dark brown, paler at base below. Legs and feet brown, much lighter than in "collybita." Wing ♂ 60-70, ♀ 60-66. Tarsus 18-20. Bill 8-9. Immature birds and adults after autumn moult are yellower throughout.

Breeds.—Europe (including British Isles) from about Arctic Circle south to N. Spain, N. and C. Italy, Bosnia, Montenegro and S. Russia, Sardinia, Caucasus and east to Urals. Migratory; occurs on passage N. Mediterranean countries, Egypt, and N.W. Africa. Winters tropical and S. Africa; some N.W. Africa, Palestine, and Asia Minor; also reported north of the Mediterranean.

P. trochilus eversmanni (Bonaparte). After autumn moult difficult to distinguish from typical race, but usually browner, less green. In summer greyer above and paler below. Wing averages longer, ♂ 65-72, ♀ 64-70. Tarsus 19-20. Bill 8-9.

Breeds.—N.E. Russia (Petchora and Urals) south to Sarepta; and also N. Siberia. Occurs on passage Egypt, Asia Minor, and British Isles. Winters tropical and S. Africa.

Phylloscopus nitidus nitidus Blyth. GREENISH WARBLER.

♂ ♀ summer. Above greyish green, supercilium yellow; greater wing coverts yellow tipped forming a wing bar (occasionally middle wing coverts faintly tipped forming an indistinct bar); beneath pale yellow, including under wing coverts and axillaries. 1st primary 5-10 m.m. beyond coverts; 2nd sometimes equal to 7th or equal to 8th, generally between 7th and 8th; outer webs emarginate 3rd to 6th. Bill brown, paler at base below. Legs and feet brown. After autumn moult is bright green above and yellow below. Wing 60-66 (H.).

Breeds.—Caucasus, east to Afghanistan. Winters in India. Occurred once Heligoland.

P. nitidus viridanus Blyth. Like typical form but brownish olive green above; eye-stripe yellowish buff; much paler yellow beneath; wing bar more buff. Wing ♂ 60-65, ♀ 58-62. Tarsus 18-21.

Breeds.—Baltic Provinces (rare); N. Russia from Olonetz and

Perm Govt. south to Tula Govt. ; Urals south to Orenburg, and also in W. Siberia. Winters in India. Accidental England and Heligoland.

Phylloscopus bonelli bonelli (Vieillot). BONELLI'S WARBLER. *Fr.* Pouillot Bonelli ; *Ger.* Berglaubsänger ; *Ital.* Lui bianco.

Adult, summer. Above brown, yellowish green on rump ; outer margins of tail feathers, wing coverts and quills, and the eye-stripe pale buff ; beneath white ; under wing coverts and axillaries yellow. 1st primary about 5 m.m. longer than coverts ; 2nd between 6th and 7th ; 3rd and 4th longest ; 3rd, 4th, and 5th emarginate outer webs. Bill dark horn above, paler at base below. Legs and feet brown. Wing ♂ 59-67, ♀ 57-62. Tarsus 19-20. Bill 7-8.

Breeds.—S. and E. France, S.W. Germany, Switzerland, Austria, Italy (especially N. and C.), Spain and Portugal, Algeria, Tunisia and Morocco. Migrates ; rare in Egypt on passage. Winters Africa (Soudan and Senegal).

P. bonelli orientalis (Brehm). Greyer above and wing longer than in typical form. Wing ♂ 66-71, ♀ 64-67 (H.).

Breeds.—Greece, Crimea, Asia Minor to Palestine. Occurs Egypt on passage. Winters Nile Valley.

Phylloscopus sibilatrix sibilatrix (Bechstein). WOOD WARBLER. *Fr.* Pouillot-siffleur ; *Ger.* Waldlaubsänger ; *Ital.* Lui verde ; *Swed.* Grön Sångare.

Adult, summer. Above yellowish green ; face, eye-stripe, throat, breast, thighs, edge of wing, and axillaries bright yellow, rest of underparts white. 1st primary very small, shorter than primary coverts ; 3rd longest ; 2nd generally equal to, sometimes a little shorter than 4th, always longer than 5th ; 3rd to 5th emarginate. Bill brown, paler below. Legs and feet brownish flesh. Wing ♂ 74-79, ♀ 70-79. Tarsus 18-19. Bill 8-10. After autumn moult plumage duller ; upper parts green, tinged brown on crown and mantle.

Breeds.—S. Norway, Sweden to 66°, N. Russia to 64°, Baltic Provinces, British Isles, south to Central France, Austria and Hungary. Migrates ; occurs on passage S. Europe, Palestine,

Malta, Egypt, and N. Africa. Winters C. Africa; a few in S. Spain, Greece, S. Tunisia, and oases of Algerian Desert.

P. sibilatrix erlangeri Hartert. Very doubtful form. Brighter coloured, especially supercilium, face and breast.

Breeds.—Spain, S. France, Sardinia, W. Balkans; Central Morocco. Occurs Egypt on passage (spring).

Phylloscopus borealis borealis (Blasius). EVERSMAAN'S WARBLER.

♂ ♀ summer. Above greyish brown with green tinge; greater wing coverts tipped yellowish white, forming a wing bar; middle wing coverts tipped greenish white, forming an indistinct bar; eye-stripe buff; beneath white faintly tinged yellow, greenish grey on flanks, axillaries and under wing coverts pale yellow; 1st primary usually shorter than, sometimes equal to, rarely a little longer than primary coverts; 2nd between 5th and 6th, rarely between 6th and 7th; 3rd and 4th longest; 3rd to 5th emarginate. Bill dark brown, yellowish below, and very wide and stout; rectal bristles well developed. Legs and feet horn brown. Wing ♂ 62-71, ♀ 61-67 (W.). Tarsus 19-21. Bill 8-9. After autumn moult greener above and yellower beneath.

Breeds.—Extreme north of Europe and Asia; in Urals south to Perm. Winters in E. Asia. Accidental in Britain, Heligoland, E. Galicia, and Italy.

Phylloscopus inornatus inornatus (Blyth). YELLOW-BROWED WARBLER. ("P. superciliosus" of authors.)

♂ ♀ Above olive green, browner on crown and nape, generally with a greenish yellow central stripe on crown; eye-brow yellowish buff; two pale yellow wing bars; beneath whitish with a yellow tinge, under wing coverts and axillaries yellow. 1st primary about 5 m.m. longer than coverts, 2nd between 6th and 8th, usually 6th and 7th, 3rd and 4th longest, 3rd to 6th emarginate. Bill dark horn, yellow below at base. Legs and feet pale greenish brown. Wing ♂ 54-59, ♀ 51-58. Tarsus 17-18. Bill 7-8.

Breeds.—N. Siberia. Appears annually in Europe from Orenburg and N.E. Russia west to Germany, Austria, France, Italy, Holland; not rare Heligoland; regular small numbers British Isles, nearly always in autumn. Chief winter quarters, China and S.E. Asia.

Phylloscopus proregulus proregulus (Pallas).

♂ ♀ Above olive green, supercilium, central coronal stripe, some nuchal feathers, tips of median and greater wing coverts (forming two wing bars), and rump yellow; beneath white tinged yellow, under wing coverts and axillaries yellow. 1st primary twice as long as coverts; 2nd between 7th and 9th, generally 7th and 8th; 4th and 5th longest; 3rd to 6th emarginate. Bill dark brown, yellow below at base. Legs and feet greenish brown. Wing ♂ 49-56, ♀ 47-55 (W.). Tarsus 16-17. Bill 6-7.

Breeds.—E. Siberia. Winters chiefly S. China. Annual on passage at Orenburg; accidental Britain and Heligoland.

Phylloscopus fuscatus (Blyth). DUSKY WARBLER.

♂ ♀ Above brown, rufous on upper tail coverts; supercilium buff, paler in front of eye; beneath, whitish on throat and middle of abdomen, breast and under tail coverts buff, flanks darker, axillaries and under wing coverts buff. 1st primary twice length of coverts and about half as long as 2nd; 2nd between 8th and 9th or 9th and 10th; 4th longest; 3rd to 6th emarginate. Bill dark horn, yellow below. Legs and feet yellow brown. Wing ♂ 56-64, ♀ 53-61 (W.). Tarsus 20-22. Bill 8-9.

An E. Siberian species; has occurred twice in Britain.

HERBIVOCULA.

Tail slightly rounded; bill broader than in "*Phylloscopus*."

Herbivocula schwarzi (Radde).

♂ ♀ Closely resembles "*P. fuscatus*"; above olive brown, reddish on rump and upper tail coverts, supercilium buff; beneath yellowish white, darker on flanks; outer tail feathers 3.5 m.m. shorter than central. 1st primary about twice length of coverts; 2nd between 8th and 10th; 4th and 5th longest; 3rd to 6th emarginate. Wing ♂ 58-67, ♀ 56-64 (W.). Tarsus 21-22. Bill 8-9.

An E. Siberian species; has occurred once in England.

CETTIA.

Small brown Warblers with graduated tail of 10 feathers, under tail coverts reaching about $\frac{2}{3}$ of tail; frequent damp localities; of shy habits; insectivorous; nest a cup in a bush; eggs brick red, occasionally with a pinkish tinge.

Cettia cetti cetti (Temminck). CETTI'S WARBLER.

♂ ♀ Above red brown, supercilium dull white; beneath dull white, brown on flanks, abdomen, and under tail coverts; axillaries pale grey brown with whitish tips. Bill dark brown, paler below at base. Legs and feet brown. Wing ♂ 58-66, ♀ 54-60 (W.). Tarsus 20-22. Bill 9-10.

Resident.—S. Europe, from Spain and Portugal through S. France to Balkans, Greece, S. Russia and Caucasus; Sicily, Sardinia, Corsica, Asia Minor; also N.W. Africa, Morocco to Tunisia.

C. cetti cettioides Hume. Paler than typical form with little or no brown on flanks. Wing ♂ 70-72.5, ♀ 64-65 (H.).

Resident.—S. Ural and Lower Volga and in W. Asia from Persia to Turkestan. Recorded from India in winter.

LUSCINIOLA.

Graduated tail of 12 feathers; under tail coverts long; bill fine, rictal bristles short and weak; 1st primary longer than coverts; frequent reed-beds, very shy; nest in reed clump or small bush over water; eggs like Sedge Warblers' but paler and more greenish grey.

Luscinola melanopogon melanopogon (Temminck). MOUSTACHED WARBLER. *Ital.* Forapaglie castagnolo.

♂ ♀ Above chestnut brown, with broad black striations on back; supercilium dull white; beneath dull white, rusty on breast, flanks and abdomen. Bill dark brown, paler below at base. Legs and feet dark brown. Wing ♂ 53-62, ♀ 52-59. Tarsus 19-22 (W.). Bill from gape 14.5-15.5.

Breeds.—S.E. Spain, S.E. France, N. and C. Italy, Sicily, Hungary, Lower Danube, Albania and Asia Minor. In winter occurs Greece and Egypt. Rare Malta, Corsica, Sardinia. Once occurred Britain.

L. melanopogon mimica Madarasz. Above much greyer, less chestnut, more olive brown; flanks paler. Wing ♂ 61-65.5 (H.).

Breeds.—Ural and Volga Deltas to S.W. Asia. Occurs in winter in N.W. India.

LOCUSTELLA.

Small reddish brown Warblers. 1st primary shorter than coverts; no rectal bristles; tail rounded, under tail coverts long, reaching over tips of lateral rectrices; frequent marshy and reedy but also drier places; nest a cup near ground in herbage or brushwood; eggs white, pinkish when fresh, finely dotted or freckled with reddish brown.

Locustella fluviatilis (Wolf). RIVER WARBLER. *Ger.* Flussrohrsänger.

♂ ♀ Above greenish olive brown, not striated; tail faintly barred; beneath paler, whitish on throat and abdomen, and boldly streaked with olive brown on throat and breast; under tail coverts broadly tipped white. Bill dark brown, pale below. Legs and feet brown. Wing ♂ 75-79, ♀ 70-75. Tarsus 20-22 (H.). Bill 9-11.

Breeds.—E. Germany (local), Poland, Baltic Provinces, S. and C. Finland, Austria, S. Hungary, Transylvania, Rumania, Central Russia north to 60° and east to Urals and Lower Volga. Migrates; occurs on passage S. Russia, Asia Minor and Palestine; has been obtained E. Africa in winter.

"*L. f. obscura*" Tschusi described from Bosnia is not considered separable.

Locustella luscinioides luscinioides (Savi). SAVI'S WARBLER. *Fr.* Fauvette des Saules; *Ger.* Nachtigall-Rohrsänger; *Ital.* Salciaiola.

♂ ♀ Above reddish brown, tinged olive, not striated; tail faintly barred; beneath reddish buff, throat and abdomen white, throat and breast not striated. Bill dark brown above, pale below. Legs and feet pale brown. Wing ♂ 67-72, ♀ 65-70. Tarsus 21-22. Culmen ♂ 16-17, ♀ 15-15.5 (H.).

Breeds.—S. France, Italy (local) especially north, Spain, Algeria, Tunisia, Holland and adjacent Rhine territory, E. Prussia, Poland, Galicia, Hungary, Rumania, Bulgaria, C. and S. Russia north to Ufa and Volga Delta, Crete, and probably Palestine. Migrates; occurs on passage in Egypt and in winter in Morocco and Sahara. Accidental Britain (formerly bred English fens).

"*L. l. geyri*" Koenig described from Rhine Provinces is not considered separable.

L. luscinioides fusca (Severtzow). Paler than typical form, above less reddish brown, more olive coloured, flanks paler and under tail coverts whiter.

Breeds.—Transcaspia and Turkestan. Has occurred in winter in Egypt.

Locustella certhiola (Pallas).

Somewhat resembles a Sedge Warbler, but with rump and upper tail coverts generally striated, and tail black beneath with white tips; 1st primary about equal to primary coverts. Young are very yellow below. Wing ♂ 61-68, ♀ 59-65 (W.). Tarsus 20-22.5. Culmen 15-17. Bill brown, yellow at base below. Legs and feet yellowish white.

An Asiatic species. Has occurred once in Heligoland and once in Ireland.

Locustella nævia nævia (Boddaert). GRASSHOPPER WARBLER. *Fr.* Locustelle tachetée; *Ger.* Heuschreckensänger; *Ital.* Forapaglie macchiettato.

♂ ♀ Above olive brown with dark spots, no supercilium, tail rounded and faintly barred; beneath dull white, breast with a row of brown spots, flanks and under tail coverts pale brown with a few streaks; 1st primary about equal to primary coverts. Bill dark brown above, pale brown below with dark tip. Legs and feet pale brownish. Wing ♂ 60-67, ♀ 59-66 (W.). Tarsus 18-21. Bill 8-10.

Breeds.—British Isles, Holland, France (especially C. and S.), N. Spain, Switzerland, Italy south to Tuscany, Austria, Hungary, Germany, Baltic Provinces, Poland, Rumania, S. and C. Russia to about 62° N. Rare in Denmark, Norway and Finland. Migratory; occurs S. Spain on passage, probably also winters. N.W. Africa in winter.

L. nævia straminea Seebohm. Somewhat smaller. Wing ♂ 57-60 (H.). Above more olive coloured, less brownish.

Breeds.—Ural District and Caucasus, and east in Asia to Altai Mountains. Winters in India.

Locustella lanceolata (Temminck). LANCEOLATED WARBLER.

Resembles "L. nævia" but smaller, underparts more tawny; in most striations more profuse and distinct over entire breast (after moult) and over flanks. Bill dark brown, paler below.

Legs and feet pale yellowish brown. Wing ♂ ♀ 52-59. Tarsus 18-19. Bill 8-10. Young are very yellow beneath.

An Asiatic species which breeds in N. Russia (Onega). Accidental Britain, Galicia, Dalmatia.

ACROCEPHALUS.

1st primary small and narrow, seldom longer than coverts; tail 12 feathers, slightly graduated; generally frequent damp places or reed-beds; nest a deep cup on ground or attached to reeds, or in a bush near water; eggs grey or greenish grey with dark markings or blotches.

Acrocephalus arundinaceus arundinaceus (L.).

GREAT REED WARBLER. *Fr.* Rousserolle; *Ger.* Drosselrohr-sänger; *Ital.* Cannareccione.

♂ ♀ Above light brown, tinged reddish, especially on rump and upper tail coverts; supercilium and feathers round eye dull white; beneath, throat and breast (faintly striated) and centre of belly white, rest of underparts with axillaries and under wing coverts fawn colour; 1st primary very much shorter than coverts; 2nd between 3rd and 4th; 3rd longest. Bill black, pale below at base. Legs and feet bluish grey. Wing ♂ 90-103, ♀ 88-94. Tarsus 27-31 (W.). Bill 14-15.

Breeds.—Continental Europe to Baltic (rare in Sweden and Denmark), Baltic Provinces, Russia north to nearly 60°, east to Urals, south to Caspian Sea and Caucasus; Sicily, N.W. Africa, Asia Minor. Migrates; occurs Egypt on passage; winters tropical and S. Africa. Of occasional occurrence England; accidental Madeira.

A. arundinaceus zarudnyi Hartert. Above less reddish, more olive coloured, most noticeable on rump; under tail coverts and flanks paler fawn.

Breeds.—Volga Delta and east into Transcaspia and Turkestan.

A. arundinaceus orientalis (Temminck and Schlegel). Plumage as in typical form, but wing formula different; 4th primary being equal to or longer than 2nd. Wing also shorter, ♂ 80-92, ♀ 77-84 (W.).

Breeds.—S.E. Siberia and N. China. Occurred once in England.

Acrocephalus stentoreus stentoreus (Hemprich and Ehrenberg).

In plumage resembles "arundinaceus" but more rusty coloured below. Wing formula different; 2nd primary between 5th and 7th, 3rd and 4th equal and longest; emarginate 3rd and 4th. Wing shorter, ♂ 80-85, ♀ 75-77. Bill thin and long. Culmen ♂ 25-27, ♀ 23-25 (H.). Bill dark brown above, below pale at base with black tip. Legs and feet greenish plumbeous.

Resident.—Egypt (Suez through Nile Delta to Natron Valley), also Palestine.

Acrocephalus scirpaceus scirpaceus (Hermann). REED WARBLER. ("A. streperus"). *Fr.* Rousserolle effarvatte; *Ger.* Teich-Rohrsänger; *Ital.* Cannaiola; *Swed.* Rörsångåre.

♂ ♀ Above greyish brown, tinged red, especially on rump and upper tail coverts; beneath white tinged red buff especially on flanks and under tail coverts; 1st primary about equal in length to coverts, 2nd between 3rd and 5th, 3rd longest, outer web 3rd emarginate; on inner web of 2nd primary is a notch which usually falls between tip of 8th primary and tips of secondaries. Bill dark horn, yellowish below at base. Legs and feet greenish brown. Wing ♂ 62-70, ♀ 60-68. Tarsus 21-24. Bill 10-11.

Breeds.—S. and C. England; Continental Europe north to Baltic, Denmark, S. and C. Sweden to 59° N., Balearic Islands, Sicily, Morocco, Algeria, Tunisia, Asia Minor. Migrates; occurs Egypt on passage; rare visitor Sardinia, Corsica, Malta, Scotland and Ireland. Winters in tropical Africa (Uganda, Tanganyika territory, Gambia), and some in Mediterranean basin.

A. scirpaceus crassirostris (Brehm). Less rusty, more olive above, flanks and under tail coverts paler.

Breeds.—Orenburg to Ural and Volga Deltas and in S.W. Asia. Common on passage in Egypt. Winters in E. Africa (Kenya Colony and Tanganyika territory).

Acrocephalus palustris (Bechstein). MARSH WARBLER. *Fr.* Rousserolle verderolle; *Ger.* Sumpfröhrsänger; *Ital.* Cannaiola verdognola.

Strongly resembles "scirpaceus" but above is greyish brown with an olive tinge; notch on 2nd primary falls between 5th

and 8th primaries ; wing structure otherwise as in "scirpaceus." Bill dark horn above, flesh coloured below. Legs and feet yellowish brown. Wing ♂ 66-72, ♀ 64-72 (W.). Tarsus 21-24. Bill 10-11.

Breeds.—S. England (local), Continental Europe north to Denmark (exceptionally S. Sweden), south to N. Spain, N. Italy, Macedonia, S. and C. Russia, from Esthonia, Pskov, and Orenburg, also Caucasus, shores of Caspian and Black Seas, and Persia. Migrates ; occurs Egypt on passage, winters in Africa.

Acrocephalus dumetorum Blyth. BLYTH'S REED WARBLER.

In winter plumage closely resembles "palustris" ; in summer somewhat darker above than that species ; 2nd primary shorter than 5th, about equal to 6th ; 1st primary about equal to coverts ; 3rd, 4th, and 5th emarginate ; notch on inner web of 2nd primary falls short of secondaries, 3rd also notched, notch falling between 8th primary and secondaries. Bill brown above, flesh coloured below. Legs and feet reddish brown. Wing shorter than in "palustris," ♂ 60-65, ♀ 59-64. Tarsus 20-23. Bill 10-11.

Breeds.—N. Russia and S.E. Finland, and to south-east in Russia towards Orenburg and Lower Ural ; also in W. Siberia to Altai. Winters in India. Rare visitor to Britain.

Acrocephalus agricola agricola Jerdon.

Resembles "dumetorum" but has a reddish tinge above as in "scirpaceus." 1st primary generally longer than coverts, 2nd between 6th and 7th, seldom between 7th and 8th, 3rd, 4th and 5th about equal and longest ; 3rd, 4th and 5th emarginate on outer web ; 2nd and 3rd notched on inner web. Bill dark brown above, below yellowish flesh. Legs and feet pinkish brown. Wing ♂ ♀ 55-60.5. Tarsus 20-22. Culmen 15-16 (H.).

Breeds.—Danube Delta, Crimea, S. and C. Urals, and in Asia (Transcaspia to Altai). Winters in India and N.E. Africa. Occurred once Heligoland.

Acrocephalus schœnobæus (L.) SEDGE WARBLER.

Fr. Becfin des jons ; *Ger.* Schilfrohrsänger ; *Ital.* Forapaglie ; *Swed.* Säfsångare.

♂ ♀ Above olive brown, with dark striations, except on rump and upper tail coverts (which in some are rufous tinged) ; super-

cilium yellowish white ; beneath white more or less tinged buff ; 1st primary shorter than primary coverts, 3rd only emarginate, notch on inner web of 2nd falls between tips of 7th and 9th primaries. Bill dark brown, reddish yellow below at base. Legs and feet bluish grey. Wing ♂ 62-71, ♀ 60-70. Tarsus 20-22. Bill 10-11. Young are yellower, and streaked on chest.

Breeds.—British Isles, Continental Europe north to Finmark, Finland, in Russia north to 68°, south to N. Spain and Italy, and Balkan Peninsula ; in Asia east to Yenisei, south to Altai Mountains and Turkestan. Migratory ; occurs on passage Greece, Mediterranean Islands, N. Africa to Tripoli and Egypt. Rare in Spain. Winters in Africa.

Acrocephalus aquaticus (Gmelin). AQUATIC WARBLER. *Fr.* Becfin aquatique ; *Ger.* Binsen-Rohrsänger ; *Ital.* Pagliarolo.

♂ ♀ Resemble "schœnobænus" but above greyer and more boldly striated, including rump and upper tail coverts ; crown dark brown with one central pale stripe ; beneath white, breast and flanks buffish with dark shaft streaks ; tail feathers very pointed ; 1st primary in adult very small, shorter than coverts, in young, longer than coverts ; 3rd primary emarginate. Bill brown, yellowish at base below. Legs and feet pale straw. Wing ♂ 61-67, ♀ 61-64. Tarsus 19-21. Bill 8-9. Young are more tawny, and not streaked below.

Breeds.—Continental Europe, south of Baltic, but rare in S. Spain and absent from south of Bosnia and Bulgaria ; in Russia north to about 56° ; also Algeria, Tunisia, and Sardinia. Migrates ; occurs in Corsica, Sicily, S.E. Europe and Egypt on passage. Rare visitor to Sweden, Britain, Heligoland.

HYPOLAIS.

Intermediate between Willow and Reed Warblers ; tail square or slightly rounded ; under tail coverts short ; bill broad ; frequent wooded country, gardens, etc. ; insectivorous ; good songsters ; nest a cup in fork of bush or tree ; eggs salmon or lilac spotted with purplish black.

Hypolais icterina (Vieillot). ICTERINE WARBLER. *Fr.* Fauvette icterine ; *Ger.* Gartenlaubvogel ; *Ital.* Canapino maggiore ; *Swed.* Bastardnäktergal.

♂ ♀ Above olive green ; lores, supercilium, ear coverts, and underparts yellow. Wing long and pointed ; 1st primary equal to or shorter than coverts, 2nd between 4th and 5th, 3rd longest ; 3rd to 5th emarginate. Bill brown above, yellowish below. Legs and feet plumbeous. Wing ♂ 76-81, ♀ 72-78 (W.). Tarsus 20-21. Bill 10-11.

Breeds.—Continental Europe, in Scandinavia to about Arctic Circle, Finland, C. and N. Russia to about 64°, east to Ufa and N.E. Samara (rare at Orenburg), south to Pyrenees, Switzerland, Italy, Croatia, Montenegro, Bulgaria, and Caucasus ; also Asia to about 85° east. Migrates ; occurs on passage Sicily, Sardinia, Greece, Asia Minor, Egypt, and Algeria. Occasional in Britain. Winters in Africa.

Hypolais polyglotta (Vieillot). MELODIOUS WARBLER.
Fr. Fauvette lusciniolè ; *Ger.* Sänger-Laubvogel ; *Ital.* Canapino.

♂ ♀ Closely resemble "icterina" but 1st primary longer than primary coverts, 2nd between 5th and 7th ; underparts rather brighter yellow. Bill dark brown above, yellow below. Legs and feet pale slaty brown. Wing shorter, ♂ 62-69, ♀ 62-66. Tarsus 19-21. Bill 9-11.

Breeds.—France (C. and S.), Switzerland, especially S., Italy, Austria, Croatia (rare), Spain, Portugal, Morocco, N. Algeria, Tunisia. Migrates ; occurs Sicily on passage. Winters in Africa.

Hypolais olivetorum (Strickland).

♂ ♀ Above brownish grey, faint supercilium and eye-rim white ; beneath white, greyish on flanks, slight yellow tinge on breast ; outer rectrices margined white on both webs ; 1st primary much shorter than coverts ; 2nd between 3rd and 5th and about equal to 4th, 3rd longest. Bill above brown, yellow below. Legs and feet bluish grey. Wing 85-88.5 (H.). Tarsus 22-24. Bill 12-13. Young are more olive on back and duller coloured.

Breeds.—S. Dalmatia, Greece, Greek Islands, Asia Minor, Cyprus, Palestine. Has occurred in Italy and Algeria. Winters in Africa.

Hypolais pallida pallida (Hemprich and Ehrenberg).

♂ ♀ Above pale grey brown, with faint olive tinge ; supercilium and underparts buffish white, flanks tinged brown. 1st primary 3-7 m.m. longer than coverts ; 2nd between 6th and 7th,

rarely 5th and 6th; 3rd, 4th, and 5th emarginate outer webs. Bill brown, yellowish below at base. Legs and feet pale brown. Wing 64-69. Tarsus 20-22 (H.). Bill 11-12.

Breeds.—Egypt (Nile Valley). Migrates; occurs in winter Nubia and Soudan.

H. pallida elæica (Lindermayer). Upper parts more grey, less brown than in "pallida." Wing ♂ 64-68, ♀ 63-65. Tarsus 20-23 (W.).

Breeds.—Balkan Peninsula, Rumania, Dalmatia, Greece, Greek Islands, Asia Minor to Persia and Transcaspia. Winters E. Africa and S. Arabia. Once recorded Egypt.

H. pallida reiseri Hilgert. 1st primary 10 m.m. longer than primary coverts; paler, greyer, less olive above than typical form. Wing 65-68 (H.).

Breeds.—Oases S. Algeria.

H. pallida opaca Cabanis. A western form of "pallida." Bill larger and broader, 12-13. Wing longer, 66-72.

Breeds.—Middle and S. Spain, Morocco, N. Algeria, Tunisia. Rare visitor S. France, Italy, and Egypt. Winters oases Sahara, and W. tropical Africa.

Hypolais scita (Eversmann). ("H. caligata" of authors).

Smaller than "pallida," darker and redder above, more rusty on breast; 1st primary 4-7 m.m. longer than coverts; 2nd between 6th and 7th; 3rd, 4th, and 5th longest. Wing 57-61 (H.).

Breeds.—E. Russia (Olonetz and Moscow to Astrakhan and Kirghiz Steppes, Urals, Samara, Orenburg and Volga Valley), Caucasus, also W. Siberia to Yenisei. Winters in N. and C. India.

SYLVIA.

Rictal bristles less developed than in "Acrocephalus" and "Hypolais"; small insectivorous birds (mostly migratory); nest, a cup in bushes, trees, or amongst plants near the ground; eggs spotted.

Sylvia nisoria nisoria (Bechstein). BARRED WARBLER. *Fr.* Babillarde épervière; *Ger.* Sperbergrasmücke; *Ital.* Bigia padovana.

♂ Above grey, tinged brown, scapulars, secondaries, rump, and upper tail coverts with faint dark bars and white tips; outer rectrices bordered white both webs, the others, except central, white on inner web only; beneath white with dark scale-like bars; 1st primary about half the length of primary coverts; 2nd equal to 3rd. Bill dark horn, yellowish at base below. Legs and feet brownish grey. Wing ♂ 84-90, ♀ 83-87. Tarsus 24-25. Bill 10-11. ♀ browner above and less barred below. Young: no bars except on under tail coverts; below buff tinged especially on flanks, under tail coverts and abdomen.

Breeds.—Denmark, S. Norway and Sweden, Germany (local and rarely west of Rhine), south to N. Italy, Balkans and Rumania, east through Baltic Provinces and C. and S. Russia to S. Ural. Migrates; occurs on passage Britain, Holland, France, Switzerland, S. Italy, Greece. Winters in E. Africa.

S. nisoria merzbacheri Schalow. Somewhat paler grey above. Wing 86-93.5 (H.).

A W. Siberian form whose range extends to Caucasus.

Sylvia hortensis hortensis (Gmelin). ORPHEAN WARBLER. *Fr.* Fauvette orphée; *Ger.* Sängergasmücke; *Ital.* Bigia grossa.

♂ Above grey brown, crown, nape, and ear coverts sooty black; throat and underparts white with a pinkish buff tinge, deepest and browner on flanks and under tail coverts; outer pair tail feathers white except a small part of inner web. Bill black above, bluish below with black tip. Legs and feet bluish grey. Wing ♂ ♀ 74-83. Tarsus 22-24. Bill 10-12. ♀ Crown browner, less contrasted, ear coverts always dark.

Breeds.—C. and S. France, Luxemburg, S. Switzerland, Italy (chiefly in N.), Balearic Islands, Spain, Portugal, N. Africa (Morocco to Tripoli). Migrates; not common on passage Sicily and rare in Malta. Winters Saharan oases to W. tropical Africa. Accidental Britain, Heligoland, Belgium, and Tyrol.

S. hortensis crassirostris Cretschmar. Bill longer and more massive, 12-13; pinkish tinge below more rusty.

Breeds.—S.E. Europe; Dalmatia, Montenegro, Greece, S. Russia; and Asia Minor into S.W. Asia. Occurs on passage Egypt. Winters India, S. Arabia, and N.E. Africa.

Sylvia simplex Latham. GARDEN WARBLER. *Fr.* Fauvette des jardins ; *Ger.* Gartengrasmücke ; *Ital.* Beccafico ; *Swed.* Trädgårdssångaren.

♂ ♀ Above brown, tinged olive ; beneath white, throat, breast, flanks, and under wings rusty buff ; 1st primary shorter than coverts, 2nd between 3rd and 4th, 3rd longest. Bill dark brown, yellowish at base below. Legs and feet greyish brown. Wing ♂ 71-81, ♀ 72-80. Tarsus 20-22. Bill 9-10.

Breeds.—British Isles, Continental Europe to about 70° N., east to Urals, N. Slopes of Caucasus, and through W. Siberia to Yenisei. In Greece only on passage ; also occurs then in N. Africa (Morocco to Egypt). Winters C. and S. Africa. Eastern birds from S. Russia and Siberia are paler and greyer than western birds, and average somewhat longer in wing.

Sylvia atricapilla atricapilla (L.). BLACKCAP. *Fr.* Fauvette à tête noire ; *Ger.* Schwarzkopf ; *Ital.* Capinera ; *Swed.* Svarthufvadesångare.

♂ adult. Above brownish olive green, crown black not descending below eye ; throat grey ; nape and underparts pale grey ; no white on tail. Bill black above, bluish below with black tip. Legs and feet bluish grey. Wing ♂ ♀ 70-79. Tarsus 20-21. Bill 9-10. ♀ and young : crown red brown.

Breeds.—Throughout Europe and British Isles, north to 69° in Norway, and about 62° in Russia ; Caucasus, Azores, Morocco, Algeria, and Tunis north of Atlas, also Asia Minor and W. Siberia. Winters Mediterranean basin, Egypt, and further south in Africa.

S. atricapilla heineken (Jardine). Darker above than typical form and browner on flanks. In Madeira and Palma (Canaries), an aberrant form occurs, dingy olive green both above and below, and in ♂ entire head and chest black. Wing ♂ 69-72, ♀ 68-71 (H.).

Resident.—Madeira and Canary Islands (Gran Canaria, Tenerife, Palma, Gomera, Hierro).

Sylvia communis communis Latham. WHITETHROAT. *Fr.* Babillarde grisette ; *Ger.* Dorngrasmücke ; *Ital.* Sterpazzola ; *Swed.* Törnsångare.

♂ Above greyish brown, greyer on crown ; wing coverts and quills edged rufous brown, broader and brighter on inner secondaries ; beneath white, rosy tinged on breast, flanks and

under tail coverts buff; eye-rim pale red; 1st primary almost as long as primary coverts. Bill dark brown above, paler below. Legs and feet pale brown. Iris yellowish brown. Wing ♂ 69-74, ♀ 68-70. Tarsus 20-22. Bill 9-10. ♀ browner; beneath buffy white without rosy tinge on breast.

Breeds.—British Isles; Continental Europe north to about 64°, and east to Urals; Balearic Islands, Corsica, Sardinia, Crete, Morocco, also Asia Minor. Occurs on passage Egypt and N.W. Africa. Winters Africa and S. Arabia.

S. communis icterops Ménétries. Upper parts and wings darker, edges to secondaries less rufous. Somewhat larger. Wing 74-78 (H.). Iris yellow.

A W. Siberian breeding form whose range extends into Caucasus, also to Orenburg, where it meets typical form. Occurs in Egypt on passage.

Sylvia curruca curruca (L.). LESSER WHITETHROAT. *Fr.* Babillarde ordinaire; *Ger.* Zaungrasmücke; *Swed.* Ärtsmyg.

♂ ♀ Above pale grey brown, greyer on crown; lores and ear coverts dark brown; beneath greyish white with faint rosy tinge; 1st primary longer than coverts, 2nd between 5th and 6th; tiny feathers on eyelids white. Bill dark horn, whitish below at base. Legs and feet plumbeous. Iris greyish brown. Wing ♂ 63-70, ♀ 62-66. Tarsus 18-20. Bill 8-9.

Breeds.—England; Continental Europe to about 64° N., east to Urals; Caucasus. May breed Scotland but occurs chiefly on passage, very rare Ireland. Spain on passage in east. Migrates chiefly to south-east. Winters N.E. Africa.

S. curruca affinis Blyth. Like typical form, but 2nd primary shorter than 6th, usually between 6th and 7th, sometimes 7th and 8th.

A Siberian race whose breeding range extends into Russia (Orenburg and Lower Volga Steppes). Occurs in Egypt (Nicoll). Winters in India. Has been reported as occurring in C. and W. Europe; once obtained at Fair Isle.

S. curruca minula Hume. Paler above than typical form and "affinis"; 2nd primary generally between 7th and 8th. Wing 60-65.

Breeds.—S.W. Asia. Has occurred at Orenburg (Grote).

Sylvia nana nana (Hemprich and Ehrenberg).

♂ ♀ Above greyish sandy brown, rufous on inner secondaries, upper tail coverts, and central tail feathers; beneath white, tinged pinkish buff; outer tail feathers white. Bill brownish horn, yellowish at base below. Legs and feet straw yellow. 1st primary somewhat longer than coverts, 2nd between 5th and 6th. Wing 56-61. Tarsus 18-20. Culmen 9-10.5 (H.).

Breeds.—S.W. Asia; from Sinai to W. India. Has occurred in Egypt.

S. nana deserti (Loche). ♂ ♀ Above redder, more sandy colour; beneath creamy white. Wing 56-59 (H.).

Resident.—Sandy deserts of Algeria, Tunisia, and Tripoli; once occurred in Italy.

Sylvia ruppelli Temminck. RÜPPELL'S WARBLER.

♂ Above grey; crown, lores, ear coverts, chin, and throat black; moustachial stripe white; beneath creamy white tinged rosy. Bill blackish brown, yellowish at base below. Legs and feet reddish brown. 1st primary slightly shorter than coverts, 2nd, 3rd and 4th equal. Wing ♂ 68-73, ♀ 66-69. Tarsus 20-21 (W.). Bill 10-11. ♀ Chin and throat white; crown and ear coverts duller black, tipped grey on crown.

Breeds.—Greece, Crete, Asia Minor and Palestine. Occurs on passage in Egypt, especially in spring. Winters in N.E. Africa. Has twice occurred in Britain.

Sylvia melanocephala melanocephala Gmelin.
SARDINIAN WARBLER. *Ital.* Occhio-rosso.

♂ Above slate, slightly tinged brown; crown and ear coverts black; beneath white, pure on throat and chest, more or less ashy elsewhere; outer pair of tail feathers largely white, 2nd and 3rd tipped white; 1st primary longer than coverts, 2nd between 7th and 8th, 3rd to 5th emarginate. Eye-ring red. Bill black, pale at base below. Legs and feet pale brown, soles yellow. Wing ♂ 56-62, ♀ 55-58. Tarsus 19-21. Bill 8-10. Tail 58-65. ♀ Above olive brown, greyer on crown; beneath whitish, brown on flanks. Young: generally browner than ♀.

Breeds.—S. France, Pyrenees, Spain, Portugal, N. Africa (Morocco to Tripoli), Mediterranean Islands, Italy and Croatia

to Greece, Bessarabia, Asia Minor and Palestine. Largely resident, occurs in Egypt in winter. Accidental in Britain and Switzerland.

S. melanocephala leucogastra (Ledru). ♂ Smaller than typical form; white on tail less in extent and less pure, more grey. Wing 55-58 (H.). ♀ darker above than typical ♀, and less white on tail.

Resident.—Canary Islands (east and west groups).

S. melanocephala momus (Hemprich and Ehrenberg). Bowman's Warbler. ♂ smaller than typical form. Wing 55-59 (H.), browner above, black of crown sharply contrasting; beneath less ashy, purer white. ♀ as typical ♀ but uniform above, crown not greyer.

Breeds.—Palestine to W. Persia. Occurs on passage Egypt in spring.

S. melanocephala norrisæ Nicoll. ♂ as in typical form but back brown. Wing 55. Tail 52.

Breeds.—Lake Birket Karun, Fayoum, Middle Egypt.

Sylvia mystacea Ménétries.

♂ Resembles "melanocephala" but crown greyer, not so black, and less strongly contrasted with back; beneath, chin and middle abdomen white, rest of underparts vinous, flanks tinged grey. Ring round eye orange. Bill brown, yellowish at base below. Legs and feet reddish brown. Wing 58-63. Tarsus 18. Tail 56-60. Culmen 11.5-12.5 (H.). ♀ Above pale grey brown, beneath buffy white.

Breeds.—S.W. Asia. Of rare occurrence Egypt in spring.

Sylvia subalpina subalpina Temminck. SUBALPINE WARBLER. *Ital.* Sterpazzolina.

♂ Above grey, tinged brown; moustachial stripe white; throat and breast cinnamon in contrast to paler flanks, but occasionally pinkish cinnamon on entire underparts; abdomen white. 1st primary about equal to coverts, 2nd between 5th and 6th, 3rd to 5th emarginate. Bill dark brown above, paler below at base. Legs and feet pale brown. ♀ Above pale brown, beneath white, tinged pinkish buff especially on breast and flanks. Wing ♂ 52-62, ♀ 52-60. Tarsus 18-20. Bill 7-8. Tail 52-55.

Breeds.—S.E. France, Italy, Sicily, Sardinia, Corsica, Malta (some), Spain and Portugal. Partly resident. Occurs Algeria and Malta on passage. Accidental Britain and Switzerland.

S. subalpina albistriata (Brehm). 2nd primary longer, generally between 3rd and 4th or equal to 4th; rictal stripe broader, throat and breast deeper cinnamon, flanks paler, more white on abdomen. Wing ♂ 59-65 (H.).

Breeds.—Balkan Peninsula, Greece, Greek Islands, Crete, Asia Minor. Occurs on passage Egypt and Malta, and in spring Algeria and Tunis. Winters N.E. Africa, S. Arabia, Saharan oases.

Both typical "subalpina" and "albistriata" occur in Malta. Two specimens obtained 4/9/14 belong to the latter race; two others obtained 9/9/14 belong to the former.

S. subalpina inornata Tschusi. ♂ like typical form but throat and flanks darker, more brick red than pink. ♀ also darker below.

Breeds.—Tripoli, Algeria, Tunis, and Morocco.

Sylvia conspicillata conspicillata Temminck.
SPECTACLED WARBLER. *Ital.* Sterpazzola sarda.

♂ Above brown; crown grey, lores and ear coverts darker; ring of small feathers round eye white; greater wing coverts and secondaries with broad cinnamon edges; beneath, upper throat white, lower slaty, rest of underparts pinkish vinous; 1st primary a little longer than coverts, 2nd between 5th and 6th. Bill dark horn, yellowish at base below. Legs and feet pale brown. ♀ Above brown, tinged grey on crown, underparts paler than in ♂. Wing ♂ ♀ 53-59. Tarsus 18-20. Bill 7-8. Tail 51-55. Young: upper parts including crown brown.

Breeds.—S.E. France (Savoy, Rhone Delta, Carmargue), Italy (local), Spain, Portugal, N. Africa (Morocco to Tunis), N. Sahara, Corsica, Sardinia, Sicily, Malta, Palestine. Occurs Egypt in winter and may breed there.

S. conspicillata bella Tschusi. Darker throughout in both sexes.

Resident.—Madcira, Canary Islands, and Cape Verde Islands.

Sylvia deserticola Tristram.

♂ Crown and upper parts grey with reddish tinge on back, wing coverts and quills with broad cinnamon margins, tail long and rounded; beneath reddish chestnut; 1st primary about 2.4 m.m. longer than coverts, 2nd between 7th and 8th. Bill dark brown, yellowish below at base. Legs and feet yellowish brown. ♀ paler throughout. Wing ♂ ♀ 53-57. Tarsus 17-18. Culmen 11-12. Tail 55-58 (H.).

Breeds.—Atlas Mountains of Tunis and Algeria. Winters in Sahara.

S. deserticola maroccana Hartert. Like typical form but cinnamon on wing feathers reduced to narrow margins.

Breeds.—High Atlas, W. Morocco.

Sylvia undata undata (Boddaert). DARTFORD WARBLER.
Fr. Pitchou de Provence; *Ital.* Magnanina.

♂ Above slaty grey, with strong brown tinge; crown greyer; beneath reddish chestnut with white tips on throat feathers, middle abdomen whitish, flanks greyish. Eye-rim orange yellow. 1st primary 5.6 m.m. longer than coverts, 2nd short, between 9th and 10th. Bill dark horn, yellowish below at base. Legs and feet brown. ♀ duller above; beneath paler, more vinous. Wing ♂ ♀ 53-57. Tail long, graduated, central feathers 64-72, outer feathers 53-57 (H.). Tarsus 18-20. Bill 7-9.

Breeds.—Central and S. France, Spain and Portugal, on east side south to Aguilas, and on west at least to Tagus, C. and S. Italy, N. Italy (rare), Malta (rare). Apparently resident.

S. undata dartfordiensis Latham. Rather smaller, above dull chocolate brown, tinged grey on crown, flanks brownish. Wing ♂ 50-54, ♀ 50-52 (W.).

Resident.—S. England, Channel Islands, N.W. France.

"S. u. armorica" (Cretté de Palluel) is not considered separable.

S. undata toni Hartert. Greyer and smaller than "dartfordiensis." Wing ♂ 49-52, ♀ 49-50. Bill 6-8. Outer tail feathers 50-55.

Resident.—Morocco, Algeria, Tunisia, S. Spain (Algeciras). Has been recorded by Favier as migrating at Tangier.

S. undata corsa Laubmann. Underparts paler and more vinous than typical form. Size as "toni."

Resident.—Corsica, Sardinia, Pantellaria.

Sylvia sarda sarda Temminck. MARMORA'S WARBLER.

♂ Above dark ashy grey, darker on crown; throat, breast and flanks grey, abdomen whitish, tinged faint vinous; 1st primary much longer than coverts, 2nd between 7th and 8th. Eye-rim red. Bill dark horn, yellow below at base. Legs and feet yellow brown. ♀ Browner above, abdomen white, flanks brownish. Wing ♂ ♀ 56-58.5. Tarsus 20-21. Culmen 11.5-12.5. Tail 62-65 (H.).

Resident.—Corsica, Sardinia, Italy (Liguria), S. Sicily, Pantellaria, Algeria, Tunisia.

S. sarda balearica Jordans. ♂ underparts lighter, whiter. ♀ above and below browner than ♀ "sarda." Smaller. Wing ♂ ♀ 48-51 (H.).

Resident.—Balearic Islands (Majorca, Cabrera, Dragonera, Iviza).

AGROBATES.

Tail strongly rounded, feathers very broad; often found in dry and sandy localities; creeping birds, often on ground or perching in low trees with conspicuous movement of tail; nest in cactus, hedges, or fork of tree, often with piece of serpent skin interwoven; eggs variable, fawn white or pale grey, sometimes greenish, with underlying greyish blotches and small dark brown surface spots.

Agrobates galactotes galactotes (Temminck). RUFOUS WARBLER.

♂ ♀ Above bright reddish isabelline, tail redder; supercilium white; all but central pair of rectrices with black subterminal band and white tips; beneath buffy white. Bill dark brown, pale at base below. Legs and feet pale brown. Wing 83-89. Tarsus 25-27. Bill 12-14.

Breeds.—Spain, Portugal, Morocco, Algeria, Tunis, Egypt, Palestine. Migrates. Winters Africa, probably not south of the line Port Soudan, Khartoum, Bahr el Ghazal. Rare visitor to Britain, Italy, Sicily, Heligoland, Malta.

A. galactotes syriacus (Hemprich and Ehrenberg). Upper parts brownish grey with only slight red tinge, rump and upper tail coverts brown red ; beneath greyer.

Breeds.—Balkan Peninsula, Ionian Islands, Greece to Asia Minor, Palestine (north of Lebanon), Syria. Rare visitor to west of Europe. Winters S. Arabia and N.E. Africa (recorded Kenya Colony in March).

A. galactotes familiaris (Ménétries). Upper parts grey brown, no red tinge, rump and tail duller ; underparts paler.

Breeds.—S. Caucasus to N.W. India. Occurred once Heligoland.

SCOTOCERCA.

Small pale brown Warblers with short rounded tail of 10 feathers ; inhabit bare stony hills, restless, gliding from bush to bush, stone to stone, or running up boughs like Creeper, sit with tail vertical, expanding and jerking it, repeatedly rising from perch, poising and dropping again. Nest, globular, in a bush ; eggs white with small red spots.

Scotocerca inquieta inquieta (Cretzschmar).

♂ ♀ Above brownish buff striated with black, faintly on back, more distinctly on head, space before and behind eye dark brown, tail dark brown faintly barred, outer pair feathers shorter with broader white tips ; beneath white, reddish buff on flanks, and with dark shaft streaks on throat. Iris yellow. Bill dark brown. Legs and feet yellowish brown. Wing ♂ 48-50, ♀ 46-47. Tail 50. Tarsus 19. Culmen 11.5 (H.).

Resident.—N. Egypt, Arabia, S. Palestine.

S. inquieta saharæ (Loche). Slightly paler (especially in summer when bleached) ; a desert form. Feet light orange. Iris pale greenish yellow. Young : iris grey blue, tarsi reddish.

Resident.—Algeria, Tunisia (south of Atlas) to Cyrenaica.

PRINIA.

Small brown Warblers with long graduated tail of 10 feathers ; restless habits ; nest purse-shaped or oval with side entrance, in fork of bush or woven among reeds ; eggs variable, greenish or bluish white, thickly dotted with red.

Prinia gracilis gracilis (Lichtenstein).

♂ ♀ Above grey brown with dark striations, tail faintly barred with white tips and dark subterminal bar ; beneath white tinged buff. Bill dark brown, pale below at base. Legs and feet yellowish flesh. Wing 45-48. Tail 55-62. Tarsus 17-18. Culmen 10-12 (H.).

Resident.—Nile Valley from Dongola south ; Fayoum.

P. gracilis deltæ Reichenow. Darker above with much bolder striations.

Resident.—Lower Egypt (Luxor to Damietta), east to Suez.

P. gracilis natronensis Nicoll. Paler above than typical form. Bill larger. Wing 46.

Resident.—Wadi el Natron, Egypt (north-west of Cairo).

CISTICOLA.

Tail 12 feathers, fan-shaped ; small brown Warblers frequenting grain fields or tangled herbage, also reeds ; nest a purse, with opening at top, amongst grass or low in bush ; eggs variable, pale blue unspotted or pale blue or white spotted rufous.

Cisticola cisticola cisticola (Temminck). FANTAIL WARBLER.

♂ ♀ Above reddish buff, streaked black, rump and upper tail coverts rufous ; beneath reddish buff, throat white ; tail graduated with white tips and black subterminal bar. Bill dark brown, yellowish white at base below, inside mouth black. Legs and feet yellow brown. Wing ♂ 45-52, ♀ 44-50. Tarsus 16-19. Bill 8-10.

Resident.—S. Spain, Portugal, Balearic Islands, Morocco, Algeria, N. and C. Tunisia, Egypt.

"C. c. arquata" (N. Africa), "C. c. mauritanica" (Algeria), and "C. c. jordansi" (Portugal), are not separable.

C. cisticola harterti Witherby. Edgings to feathers of upper parts more buff and less grey, underparts more buff.

Resident.—S. Europe from France and Italy to Greece, Asia Minor, and Egypt.

CRATEROPUS.

An African and Indian genus of birds, about size of Thrushes; frequent scrubby country in small parties; noisy; food, insects, berries, seeds; nest in bush; eggs blue.

Crateropus fulvus fulvus (Desfontaines).

♂ ♀ Sandy rufous above, redder on crown; beneath paler, throat white, middle of abdomen whitish. Bill dark brown. Legs and feet greenish grey brown. Wing ♂ 98-102, ♀ about 5 m.m. less. Tarsus 32-34. Culmen 25-26.5 (H.).

Resident.—S. Morocco, S. Algeria, Tunisia, Tripoli.

TURDUS.

Young spotted; fine songsters; almost omnivorous; nest, a cup in bushes, trees, or on ground; eggs blue or blue green, nearly always spotted or blotched with dark or reddish brown.

Turdus aureus Holandre. **WHITE'S THRUSH.**

♂ ♀ Above ochreous brown, beneath paler, both above and below with black crescentic spots; axillaries, basal half white, terminal half black; near the base of each quill (beginning usually at 3rd primary) is a buff-coloured spot, these combined form on under surface of wing a yellowish band; tail 14 feathers. Bill brown, yellowish at base below. Legs and feet yellowish brown. Wing ♂ ♀ 152-164. Tarsus 35-39. Bill 21-22.

Breeds.—E. Siberia and Japan. Of occasional occurrence in Europe, generally in winter.

Turdus sibiricus sibiricus Pallas.

♂ Above dark slaty grey, crown darker; beneath slate grey, middle of abdomen and supercilium white; on under wing a broad white band, formed by spots on inner webs of quills (except 1st and 2nd primaries). Bill black, paler at base below. Legs and feet light brown. Wing 116-122. Tarsus 30. Culmen 22-25 (H.). ♀ Above olive brown, supercilium buff; below white, tinged buff on breast and brown on flanks, each feather tipped olive brown. Bill brown.

Breeds.—C. Siberia. Occurrence in Europe casual, recorded Germany, Belgium, Holland, France, Bulgaria.

Turdus pilaris L. FIELDFARE. *Fr.* Grive litorne; *Ger.* Wachholderdrossel; *Ital.* Tordelagazzina; *Swed.* Björktrast.

♂ ♀ Head, hind neck, rump, and upper tail coverts slaty grey; back chestnut brown, supercilium white; beneath, throat, breast and flanks rufous streaked black; abdomen, under tail coverts, wing coverts, and axillaries white. Bill (winter) horn brown, yellowish at base below, (summer) ♂ yellow, ♀ yellow with brown tip. Legs and feet black. Wing ♂ 137-152, ♀ 132-147. Tarsus 30-34. Bill 15-18.

Breeds.—From north Central Europe (Galicia to Bavaria) north to limit of forest growth, east to Urals and in Siberia. Not in British Isles. Migrates; occurs in winter in British Isles and throughout Europe south from S. Scandinavia to Mediterranean, N. Africa (Morocco to Egypt), and in Asia from Asia Minor to N.W. India. Rarer and more irregular in southern parts. Occasional Madeira and Canaries.

Turdus viscivorus viscivorus L. MISTLE THRUSH. *Fr.* Draine; *Ger.* Misteldrossel; *Ital.* Tordela; *Swed.* Dubbel-Trast.

♂ ♀ Above brown with dull golden tinge on rump and upper tail coverts; beneath white, tinged buff and with large black spots; under wing coverts and axillaries white. Bill dark brown, paler at base below. Legs and feet yellowish brown. Wing ♂ 147-159, ♀ 145-156. Tarsus 30-34. Bill 16-20. Young: spotted and streaked with buff on upper parts.

Breeds.—British Isles, Continental Europe north to about 68° in Norway and Russia, east into W. Siberia, south to Caucasus, N. Italy, Sicily, Spain. Partly resident, except in colder parts of breeding range; occurs in winter Mediterranean countries, Macedonia, Asia Minor, Egypt, Tunisia, Algeria, Morocco.

T. viscivorus deichleri Erlanger. Bill stronger and longer, 20-23; paler and greyer but not constantly so.

Breeds.—Morocco, Algeria, and Tunisia, north of Atlas.

"T. v. reiseri" Schiebel, described from winter birds in Corsica, and "T. v. jubilæus" Zeidlitz, from S. Russia (Poland to Caucasus) are names given to the same, a greyer, form, which can be matched by birds from France and even England, and apparently breeding birds from S. Spain are similar. Further confirmation is required of this race.

Turdus musicus musicus L. SONG THRUSH. *Fr.* Grive ; *Ger.* Singdrossel ; *Ital.* Tordo bottacio ; *Swed.* Taltrast.

♂ ♀ Above olive brown ; centre of throat white, remainder of underparts white with large brown spots and streaks ; a tinge of reddish buff on chest rarely extending to throat, flanks tinged olive ; under wing coverts and axillaries reddish buff ; 3rd to 5th primaries emarginate. Bill black brown, yellowish at base below. Legs and feet pale brown. Wing ♂ 110-120, ♀ 105-120. Tarsus 30-34. Bill 14-16.

Breeds.—Europe north to about 68°, south to N. Spain and Mountains of N. Italy ; in Urals south to Lower Ilek River ; also in W. Siberia, Caucasus and N. Persia. Migratory in north. Occurs in winter S. Europe, Asia Minor, Egypt, N.W. Africa, Madeira, Canaries. In Britain occurs on passage and in winter.

T. musicus clarkel Hartert. Above darker, more russet ; beneath, the reddish buff extends over breast and generally throat as well as flanks ; also is more heavily spotted.

Breeds.—British Isles, Holland. Resident and migratory, occurs France and Spain in winter. Specimens occur in W. Europe and even E. Russia which agree with this race rather than typical form.

T. musicus hebridensis Eagle Clarke. Darker and redder especially on head than “clarkel” ; beneath, spots more copious and intense, flanks very dark, under wing coverts redder. Wing ♂ 115-120, ♀ 111-121. Tarsus 29-32. Bill 15-18.

Resident.—Outer Hebrides.

“T. m. brehmi” Zeidlitz, Central Europe (France to Siberia) is not considered separable from typical “musicus.”

Turdus iliacus L. REDWING. *Fr.* Mauvis ; *Ger.* Weindrossel ; *Ital.* Tordo sassello ; *Swed.* Rödvinge-Trast.

♂ ♀ Above dark olive brown, supercilium buffy yellow ; beneath white with dark streaks ; under wing coverts, axillaries, and flanks chestnut. Bill dark brown, yellowish at base below. Legs and feet yellowish brown. Wing ♂ 113-119, ♀ 112-121. Tarsus 28-30. Bill 15-17.

Breeds.—N. Europe to tundras, south to Svea in Sweden ; Iceland, Baltic Provinces south to Memel (rare), E. Russia south

to Kazan, Ufa, Orenburg; and in Siberia east to Yenisei. Migratory; occurs in winter Britain, Continental Europe south to Mediterranean, N.W. Africa, Madeira, Canaries, Caucasus, and Persia.

Turdus obscurus. Gmelin.

♂ Above olive brown, greyish on crown; lores black, supercilium and patch under eye white; beneath, chin white, throat slaty grey, breast and flanks pale cinnamon, abdomen and under tail coverts white, under wing coverts and axillaries grey. Bill brown, paler below at base. Legs and feet brown. Wing 123-130. Tarsus 31-33. Culmen 21-23 (H.). ♀ Crown like back, throat white, striped grey brown at sides; under wing coverts tinged buff.

Breeds.—E. Siberia. Occurs as rare visitor to Europe (recorded Holland, Germany, Belgium, France, Switzerland, Italy).

Turdus naumanni Temminck.

♂ winter. Above grey brown, generally with some chestnut spots; rump and upper tail coverts pale chestnut, at times grey and chestnut mixed; beneath pale chestnut, with small black spots on sides of throat and white tips elsewhere except centre of abdomen and breast, which are white, tail pale chestnut, central pair of feathers and inner webs of others grey brown. Bill brown (in summer yellowish below). Legs and feet brown. Wing 130-140. Tarsus 31-33. Bill 15-16. ♀ throat paler and throat and breast slightly spotted. Wing about 5 m.m. shorter. In summer back is uniform grey brown, and white tips beneath wear off.

Breeds.—E. Siberia. Of occasional occurrence in C. and S. Europe.

Turdus eunomus Temminck. DUSKY THRUSH. ("T. fuscatus" of authors).

♂ winter. Above brown black with smoky edges to feathers; wing coverts, outer margins and inner webs of quills and under wing coverts chestnut; supercilium, throat, under tail coverts and middle of abdomen white; breast and sides black with white edges; tail dark brown. Bill dark brown. Legs and feet brown. In summer, back, breast and abdomen darker through wearing off

of feather edges. Wing 127-137. Tarsus 28-33. Bill 15-16. ♀ Browner above, breast and sides also browner. Wing 121-128.

A Siberian breeding species ; occasionally occurs in Europe ; recorded from most countries.

Turdus ruficollis ruficollis Pallas. RED-THROATED THRUSH.

♂ Above grey brown, supercilium reddish buff ; beneath white ; throat and breast pale chestnut as also under wings and rectrices except central pair. Bill dark brown. Legs and feet brown. Wing 135-141. Tarsus 31-33. Bill 15-18. ♀ only traces of chestnut on throat and breast, generally buff with small black spots ; tail as in ♂ ; beneath dull white. Wing 130-135.

Breeds.—E. Siberia. Of rare occurrence in Europe (recorded Holland, France, Germany, Baltic Provinces, Austria, Hungary, Italy).

T. ruficollis atrigularis Temminck. Black-throated Thrush. ♂ as in typical form, but black on breast (margined white in winter), tail grey brown, under wing coverts and axillaries pale cinnamon ; crown generally streaked black. ♀ resembles typical ♀, but throat more heavily striped and no chestnut on tail.

Breeds.—W. Siberia. More frequently occurs in Europe ; reported most countries, rarer in west.

Turdus torquatus torquatus L. RING-OUZEL. *Fr.* Merle à plastron ; *Ger.* Ringamsel ; *Ital.* Merlo con petto bianco ; *Swed.* Ring-Trast.

♂ summer. Above sooty black ; gorget white, rest of underparts brown black ; quills edged whitish. Bill yellow tipped dark brown. Legs and feet brown. Wing 140-147. Tarsus 30-34. Bill 16-19. In winter, feathers above fringed grey brown, gorget dull white, feathers of underparts fringed dull white. ♀ summer. Browner than ♂, gorget duller white, most feathers above and below retain part of winter edging. Wing 135-145. In winter, fringes of feathers above and below broader than in ♂, gorget much less conspicuous.

Breeds.—British Isles, Norway to about 70°, Sweden, Finland (rare). Occurs on passage through Europe, chiefly west, rare in Russia ; winters S. Europe and N.W. Africa.

T. torquatus alpestris Brehm. ♂ as typical form but more white on wings and broader white margins on underparts at all seasons. ♀ as typical form but margins of feathers much broader.

Breeds.—Mountains of C. and S. Europe, from Spain east to Carpathians. Partly resident; occurs in winter Algeria, Tunisia, Asia Minor.

T. torquatus orientalis (Seeböhm). Resembles typical form as regards edgings of body feathers; white edges to wing feathers more extensive and purer.

Breeds.—Caucasus, N. Persia, Transcaspia. Occasionally occurs Egypt in winter.

Turdus merula merula L. BLACKBIRD. *Fr.* Merle; *Ger.* Amsel; *Ital.* Merlo; *Swed.* Kolstrast.

♂ adult. Glossy black, eye-rim and bill orange yellow. Legs and feet brown. Wing (emarginate 3rd to 6th primaries) ♂ ♀ 122-132. Tarsus 30-34. Bill 17-21. ♀ Above olive brown; beneath, throat whitish with dark streaks, or like breast, rufous, abdomen grey brown. Bill dark brown (sometimes partly yellow). Young: like ♀, but striped rufous above and with more rufous on underparts.

Breeds.—British Isles, Continental Europe (except S.E.) north to 70°; rare in far north, Urals, and colder parts of Central Europe, e.g. Hungary, Poland. Migratory in N.; occurs Faroes on passage and also N. Mediterranean countries where many winter as well as in N. Africa.

"*T. m. hispanus*" Kleinschmidt (shorter wing and longer tail) from Spain and "*T. m. schiebeli*" Tschusi (male more glossy black) from Corsica, are not considered separable.

T. merula cabreræ Hartert. ♂ like typical form but more glossy black; bill stronger and longer; wing and tail shorter. Wing 121-128. Tail 100-110 (H.). ♀ Above more rufous brown than ♀ "*merula*," below throat grey, striped black, breast olive brown. Wing 115-124. Tail 94-108 (H.).

Resident.—Madeira and W. Canaries.

T. merula azorensis Hartert. Like "*cabreræ*" but tail still shorter and wing more rounded. Wing ♂ 117-125, ♀ 112-122. Tail ♂ 90-102, ♀ 90-100 (H.).

Resident.—Azores.

T. merula mauritanicus Hartert. ♂ Tail longer than in "cabreræ." Wing 126-132. Tail 120-130. ♀ Underparts smoky grey. Bill orange. Wing 118-127. Tail 110-120 (H.).

Breeds.—S. Morocco, Algeria, Tunisia. Apparently resident.

T. merula algerus (Madarasz). Like "mauritanicus" but smaller. Wing ♂ 119-124, ♀ 112-119.

Breeds.—N. Tunis, N. Algeria, N. Morocco, S. Spain (Algeciras). Partly migratory in Spain.

T. merula aterrimus (Madarasz). ♂ like typical form, and not distinguishable. Wing 123-134. Tail 105-115. ♀ Underparts duller and greyer than in ♀ "merula." Wing 118-125. Tail 95-110 (H.).

Breeds.—Rumania, Balkan Peninsula, Crete, Asia Minor, Caucasus, and N. Persia.

T. merula syriacus Hemprich and Ehrenberg. ♂ Bill longer; black less intense. Wing 127-131. Tail 115-120 (H.). ♀ Greyer than ♀ "merula," throat less distinctly streaked.

Breeds.—Syria and Palestine to E. Persia. Occurs Egypt in winter.

MONTICOLA.

Chat-like Thrushes of solitary habits, frequenting rocky places or ruins; cup nest in clefts and holes in rocks or stone walls; eggs greenish blue, uniform or faintly spotted red.

Monticola saxatilis (L.). ROCK THRUSH. *Fr.* Merle de roche; *Ger.* Steindrossel; *Ital.* Codirosso.

♂ summer. Head and neck blue, scapulars, upper back and rump dark blue; lower back white; upper tail coverts, tail and underparts orange red. Bill black. Legs and feet brown. Wing 117-129 (W.). Tarsus 26-28. Bill 16-18. ♀ summer. Above pale brown, tinged bluish, with white tips and dark anteapical spots; tail orange red; beneath pale ochreous, with bluish white tips and barred with dark brown. Wing 114-123 (W.). In winter both sexes have the feathers tipped reddish above, and white below. Young have black shaft streaks and minute spots on back.

Breeds.—Mountains of C. and S. Europe, north to Luxemburg and N. France; Caucasus; S. Siberia to N. China; also N.W.

Africa. Occurs on passage Sicily, Malta, Sardinia, Corsica, Egypt. Winters in tropical Africa, N.W. India, China. Casual in Britain.

Monticola solitarius solitarius (L.). BLUE ROCK THRUSH. *Fr.* Merle bleu; *Ger.* Blaudrossel; *Ital.* Passera solitaria.

♂ Dark grey blue, wings and tail slaty black with blue edges (in winter many feathers edged whitish). Bill, legs and feet black. Wing ♂ ♀ 113-128. Tarsus 27-31. Bill 18-23. ♀ Above brown, tinged bluish, with faint cross bars of grey brown; beneath grey blue with similar bars, but broader. Young: above brown, no blue tinge; below dark buff with dark subterminal bars.

Breeds.—Mountains of C. and S. Europe; France, Spain, Portugal, Balearic Islands, Italy, Austria, Balkans, Greece and its islands; Malta; N.W. Africa; Asia Minor to Caucasus and Persia. Partial migrant; occurs Egypt on passage, and in winter N.E. and W. Africa.

M. solitarius transcaspicus Hartert. ♂ paler blue, ♀ paler, more greyish, than ♂ and ♀ of typical form.

Breeds.—W. Asia. Occurs on spring migration in Egypt, and has also occurred there in winter.

ŒNANTHE.

Chats about 6" long, allied to Thrushes and Redstarts; generally with upper tail coverts white; frequenting rocky or sandy localities in plains, mountains, or deserts; insectivorous; nest in holes in walls, on ground or in burrows; eggs blue, sometimes faintly red spotted.

Œnanthe œnanthe œnanthe (L.). WHEATEAR. *Fr.* Cul-blanc; *Ger.* Grauer Steinschmätzer; *Ital.* Culbianco; *Swed.* Stenskvätta.

♂ summer. Above grey; lores, ear coverts, wings, and apical third of tail black (central tail feathers two-thirds); forehead, supercilium, upper tail coverts, and basal part of tail white; beneath reddish cream, under wing coverts and axillaries black and white. Bill, legs and feet black. Wing ♂ 92-100, ♀ 89-98.

Tarsus 25-28. Bill 11-12. ♀ resembles ♂ but brown above, and black elsewhere replaced by brown. In winter sexes much alike, wing coverts and secondaries broadly margined rufous.

Breeds.—British Isles ; Continental Europe N. to Finmark, and 70° in Russia and south to N. Spain and Portugal, Balearic Islands, Corsica, Sardinia, Sicily, S. Russia ; through Siberia to Alaska. Migrates ; occurs on passage Egypt and N.W. Africa. Winters tropical Africa, Mesopotamia, S. Arabia.

Æ. œnanthe argentea (Lönnerberg). Wings longer than in typical form, 96 and over ; bill slightly longer, back paler grey, more white on forehead. (A doubtful race.)

Breeds.—Transcaspia. Occurs Egypt on passage.

Æ. œnanthe leucorrhoa (Gmelin). GREENLAND WHEATEAR. Browner above and more brightly coloured below. Larger. Wing ♂ 100-108, ♀ 97-107. Tarsus 27-30. Bill 11-12.

Breeds.—N.E. America, Greenland, and probably Iceland and Faroes. Occurs on passage British Isles, Azores, Morocco, Canaries (rare). Winters W. Africa, also in United States.

Æ. œnanthe rostrata (Hemprich and Ehrenberg). Bill longer, 13-14 m.m. ; edges of wing coverts and secondaries in autumn very pale rufous.

Breeds.—Caucasus to N. Arabia. Occurs Egypt on passage, and in winter in E. Africa.

Æ. œnanthe virago Meinertzhagen. ♂ Mantle more silvery. Bill large ; culmen 19.5-20. Wing 89-95. ♀ Back greyer than in typical ♀. Wing 87-89. Culmen 18. Young also grey above (Meinertzhagen). ♀ in this race closely resembles ♂.

Breeds.—Crete (4000-8200 feet).

Æ. œnanthe seebohmi (Dixon). ♂ More white on forehead and eyebrow than in "œnanthe" ; entire throat, face, foreneck, and under wing coverts black. Wing 92-99.5 (H.). ♀ Above paler than typical ♀.

Breeds.—Aures Mountains, S.E. Algeria ; also Atlas Mountains, C. and S.W. Morocco.

Æ. œnanthe nivea (Weigold). Underparts almost pure white, and more white on forehead ; closely resembles "argentea" but bill mostly longer ; wing averages 95 m.m. (A doubtful race.)

Breeds.—Sierra Nevada (S. Spain).

Ænanthe deserti deserti (Temminck). DESERT WHEATEAR.

♂ Above and below sandy isabelline, face, throat, and wings black, upper tail coverts, inner margins of quills and basal third of tail white, rest of tail black; under wing coverts and axillaries black and white. Bill, legs and feet black. Wing 87-92. Tarsus 25-26. Culmen 17-20 (H.). ♀ paler, throat greyer, except in very old examples.

Resident.—Deserts of Egypt (east of Delta), Nubia, N. Arabia, and Palestine. Of rare occurrence in Europe.

Æ. deserti homochroa (Tristram). Head and neck redder isabelline. Wing ♂ 87-94, ♀ 84-89 (W.).

Breeds.—Entire Sahara from Cape Blanco to Lower Egypt, west of Delta. Has occurred in Britain and Canary Islands.

Æ. deserti albifrons (Brandt). Rather larger, like "deserti" in colour but with more white on inner webs of quills. Wing ♂ 92-101, ♀ 87-97 (W.). Tarsus 24-25. Bill 12.

Breeds.—S.W. Asia; S. Caucasus to Thibet. Occurs Nubia and Somaliland in winter. Has occurred in Britain, Heligoland, Italy.

Ænanthe hispanica hispanica (L.). BLACK-EARED and BLACK-THROATED CHATS. *Fr.* Culblanc roux; *Ital.* Monachella.

♂ summer. Crown, nape, scapulars (partly black) and back cream colour, rump and upper tail coverts white; two central rectrices black, white at base, remainder white with broad black tips; lores, orbital region, ear coverts, axillaries, upper and under wing coverts, and quills black; throat black or white; underparts white with creamy tinge, under surface of quills greyish white. Wing ♂ 88-94, ♀ 86-90. Tarsus 20-23. Bill 10-12. In winter, creamy colour becomes cinnamon buff and also margins of wing coverts and secondaries. ♀ General colour brownish buff, rump and upper tail coverts white, tinged buff, tips of tail, under wing coverts, and axillaries brown, throat never quite black (as in Eastern form), but feather bases only.

Breeds.—S.W. Europe; Spain, Portugal, S. France, S. Austria, to W. Italy and Sicily; also N.W. Africa (Morocco to Tunis). Winters W. tropical Africa. Casual in Britain.

Æ. hispanica melanoleuca (Güldenstädt). ♂ summer. Differs from typical. Crown, nape, back, upper tail coverts, and underparts pure white (slightly creamy on back in some), black of lores generally meeting at base of bill, throat black (extending further down than in "hispanica") or white, scapulars all black, black tips of rectrices generally narrower, but variable, occasionally absent; under surface of quills, under wing coverts and axillaries almost black. In winter, crown, back, scapulars, margins of wing coverts and secondaries reddish brown; underparts creamy buff, black of feathers of throat with pale tips. ♀ Crown, nape and scapulars grey brown, darker on ear coverts, rump and upper tail coverts white, tips of tail brown, chin and throat greyish buff, in some very dark, almost black; beneath buff, darker on breast.

Breeds.—S.E. Europe, from Dalmatia through Balkans and Greece to S. Russia (Crimea), Asia Minor and Palestine. Occurs on passage in Egypt, S. Italy, and rarely N.W. Africa. Winters in Soudan and E. tropical Africa. Rare visitor Britain.

Ænanthe leucomela leucomela (Pallas). PIED WHEATEAR.

♂ Crown, hind neck, rump, upper tail coverts, breast, abdomen and under tail coverts white, occasionally with faint buff tinge; back, scapulars, wings, face, throat and chest black; tail feathers white with black ends, central pair, basal third white, remainder black; under wing coverts and axillaries black. Bill, legs and feet black. Wing ♂ 89-97, ♀ 87-95. Tarsus 22-24. Bill 11-12. After autumn moult head becomes brown and underparts more isabelline. ♀ Above light brown, rump and upper tail coverts white, throat greyish, chest browner, occasionally mottled with or almost black, under tail coverts buff. Some specimens have the throat white ("S. vittata").

Breeds.—S. Russia, from Dobrudscha and Crimea to Caucasus, Volga Steppes, and Urals north to 53°, and across Siberia to China. Occurs on passage in Egypt; winters N.E. Africa. Of rare occurrence Britain, Heligoland, Italy.

Ænanthe finschi finschi (Heuglin).

♂ summer. As in "leucomela" but back (not scapulars) white, under tail coverts salmon buff. Bill, legs and feet black.

Wing 85-90 (H.). Tarsus 23. Bill 13. After autumn moult head and neck greyish isabelline, tips of quills and tail white, and underparts vinous tinged. ♀ Above light brown; beneath vinous or salmon buff, throat mottled or almost pure black.

Breeds.—Egypt east of Nile to Palestine and Armenia.

Æ. finschi barnesi (Oates). ♂ like "finschi" but larger. Wing 87-95. Tarsus 25. Culmen 17-18 (H.). ♀ like "finschi" ♀ but throat browner.

Breeds.—N. Caucasus to Kirghiz Steppes, Transcaspia, Persia and Afghanistan. Has occurred in Egypt.

Ænanthe isabellina (Cretzschmar). ISABELLINE WHEATEAR.

♂ ♀ Above light brown, upper tail coverts white; tail white, central feathers black ends about 35 m.m., others about 23 m.m.; beneath isabelline, often reddish especially after moult; under wing coverts and axillaries white. Bill, legs and feet black. Wing ♂ 97-106, ♀ 94-100. Tarsus 27-30. Bill 12-13.

Breeds.—S. Russian Steppes, through Siberia to N.W. China; also Asia Minor, Syria, Palestine. Occurs Egypt on passage; winters N.W. India to N.E. Africa. Rare visitor Britain, S. Tunis, S. Algeria.

Ænanthe xanthoprymna xanthoprymna (Hemprich and Ehrenberg).

♂ Above brown; supercilium, basal part of tail and underparts white; throat, face, apical part of tail, under wing coverts and axillaries black; rump, upper and under tail coverts cinnamon. Bill, legs and feet black. Wing ♂ 93.5, ♀ 91.5 (H.). ♀ Above brown; upper tail coverts and basal part of tail cinnamon, passing into white towards the feather-roots; beneath dull buff, dark on throat and ear coverts.

Breeds.—Egypt, Nubia, Red Sea Coasts, S.W. Persia.

Ænanthe moesta (Lichtenstein). MOURNING WHEATEAR.

♂ Crown grey or pale brown; back and scapulars smoky black; outer margins of wing coverts and quills white; tail dark brown, base ferruginous; tail coverts reddish buff; lores, face, throat, under wing coverts and axillaries black, breast and abdomen white. Bill, legs and feet black. ♀ Above light

brown, crown and upper tail coverts reddish buff, tail as in ♂ but terminals paler; beneath white, often reddish, especially on breast. Wing ♂ 90-99, ♀ 85-94 (H.). Tarsus 27-30. Bill 15.

Resident.—S. Algeria, S. Tunis, S. Tripoli to N.W. Egypt, Sahara and N. Arabia.

***Enanthe lugens lugens* (Lichtenstein).**

♂ Crown and nape white or greyish; rump, upper tail coverts, underparts and inner webs of quills white; lores, face, throat, back, scapulars, under wing coverts, and axillaries black; under tail coverts reddish buff; tail white, central pair feathers black terminal half, others black at tip for about 10 m.m. Bill, legs and feet black. Wing ♂ 91-96.5, ♀ 89-91. Tarsus 26. Culmen 18.5-20 (H.). ♀ like ♂, but black less intense.

Resident.—Deserts of Egypt and Nubia to N. Arabia and Palestine.

***En. lugens halophila* (Tristram).** ♂ as in "lugens" but under tail coverts very pale buff almost white, and inner webs of quills white only on edges. ♀ differs from typical ♀; above light grey brown in place of black, throat generally grey (sometimes white or black).

Resident.—Algeria and Tunisia, south of Atlas to about 23° N., Tripoli, Cyrenaica. Once occurred Egypt.

***Enanthe leucura leucura* (Gmelin). BLACK WHEATEAR.**

♂ Black, slightly tinged brown, rump and upper tail coverts white; tail white, central pair of feathers distal half (30 m.m.) black, remainder tipped black (8-14 m.m.). Bill, legs and feet black. ♀ Brown in place of black. Wing ♂ 97-101, ♀ 90-95. Tarsus 25-28. Bill 13-16.

Breeds.—S. France, and Italy to Genoa; Spain and Portugal. Partial migrant. Has occurred Britain and Switzerland.

***En. leucura syenitica* (Heuglin).** ♂ Dark brown-black, ends of tail feathers broader (12-15 m.m.), central pair 40 m.m. ♀ much browner than ♀ "leucura."

Resident.—Tripoli, Tunisia (south of Atlas), S. Algeria, Mountains of Morocco. Occurred once in Egypt, once Britain.

***En. leucura riggenbachi* (Hartert).** Black terminals to tail feathers still broader (15-20 m.m.), central pair (43 m.m.).

Breeds.—W. Sahara, Rio de Oro.

Ænanthe leucopyga leucopyga (Brehm). WHITE-RUMPED WHEATEAR.

♂ ♀ Glossy blue black; crown (after spring moult), rump, upper tail coverts, and tail (except central pair feathers) white; in central feathers basal half white, terminal half black; 3rd to 5th primaries equal and longest. Bill, legs and feet black. Wing ♂ 101-112, ♀ 95-102.5. Tarsus 25-27 (H.). Bill 13.

Resident.—Egypt and Nubia to Palestine and Arabia.

Æ. leucopyga ægra Hartert. Bill smaller. Wing ♂ 101-106, ♀ 92-100 (H.).

Resident.—South deserts of Algeria, Tunis, and Tripoli between 28° and 30° N.

Ænanthe monacha (Temminck).

♂ Crown, nape, rump, upper tail coverts, lower breast, and abdomen pure white; back, scapulars, wings, face, throat, upper breast, under wing coverts and axillaries black; tail white except terminal half of central feathers, which is brown; 2nd primary equal to 5th, 3rd and 4th equal and longest. Bill, legs and feet black. Wing 102-106. Tarsus 23-24. Culmen 22-23 (H.). ♀ Above pale brown; below pale yellowish brown; rump and upper tail coverts brownish white; tail yellowish, terminal two-thirds of central feathers dark brown, remainder tipped brown.

Resident.—Desolate parts Egypt and Nubia through Palestine to N.W. Indian frontier.

SAXICOLA.

Bush Chats, about $5\frac{1}{2}$ " long, allied to "Ænanthe" and "Muscicapa"; frequenting bushes and herbage on commons, heaths, and hills; nest on or under bushes or in grass; eggs blue, finely spotted red brown.

Saxicola rubetra rubetra (L.). WHINCHAT. *Fr.* Tarier; *Ger.* Braunkehlchen; *Ital.* Stiaccino; *Swed.* Buskskvätta.

♂ Above dark brown with reddish margins giving a striated appearance; supercilium, chin stripe to sides of neck, two wing bars and bases of tail feathers (except mid pair) white; central pair tail feathers and terminal half of remainder blackish brown; beneath, throat and breast reddish buff, abdomen dull white. Primaries emarginate 3rd to 5th, 1st about equal to coverts.

Bill, legs and feet black. Wing ♂ 71-78, ♀ 71-76. Tarsus 20-23. Bill 8-10. ♀ Supercilium buff; beneath yellowish white (sometimes reddish) with few spots on breast; wing bars smaller.

Breeds.—British Isles; Europe north to Finmark and Archangel, south to Mountains of N. Spain, Italy, Sicily, Sardinia and Bulgaria; Russia east to Urals and W. Siberia, south to Astrakhan and Uralsk. Migrates; occurs Greece and Mediterranean countries on passage, also Egypt and N.W. Africa. Winters in tropical Africa both E. and W.

S. rubetra spatzi (Erlanger). Feather edges above paler, more yellowish brown.

Breeds.—S. Dalmatia. Occurs Algeria on passage. Has been recorded from Kenya Colony in winter.

S. rubetra noskæ (Tschusi). Larger (wing about 83); upper parts paler than "spatzi," more yellowish grey; dark centres to feathers longer.

Breeds.—Caucasus. Occurs W. Persia on passage and in Uganda in winter.

Saxicola dacotiæ dacotiæ (Meade-Waldo).

♂ Above dark brown; lores, cheeks, and ear coverts black, supercilium white; beneath white with rusty patch on breast; tail brown, no white at base; 1st primary about 10 m.m. longer than coverts. Bill, legs and feet black. Wing 60-63. Tarsus 21-22. Culmen 14-15.5 (H.). ♀ Paler; brown above, throat white, rest of underparts buff.

Resident.—Fuerteventura (E. Canary Islands).

S. dacotiæ murielæ Bannerman. ♂ Above darker, more striated; beneath, throat white, rest of underparts rusty buff. ♀ Paler buff below, cheeks and ear coverts light brown. Wing ♂ 65, ♀ 60. Tarsus 23. Bill 11.

Resident.—Alleggranza, Montana Clara (E. Canary Islands).

Saxicola torquata rubicola (L). STONECHAT. *Fr.* Traquet pâtre; *Ger.* Schwarzelchen; *Ital.* Saltinpalo.

♂ winter. Above black with rusty brown edges to feathers, upper tail coverts white with black spots and brown edges; wing patch and sides of neck white; chin and throat black, buff

tipped; underparts chestnut, buff tipped, centre of abdomen pale buff; no white on tail. Primaries emarginate 3rd to 6th; 1st primary 5-10 m.m. longer than coverts. In summer through wearing of feather tips, head, throat, and back almost black; underparts brighter. ♀ Browner above, no white on tail coverts, less black on throat, no white patch on neck, underparts duller. Wing ♂ 65-69, ♀ 60-66. Tarsus 21-23. Bill 8-10.

Breeds.—Continental Europe from Denmark, Germany (chiefly west of Elbe) and S.W. Poland, south to Mediterranean, S. Russia, Asia Minor, and N.W. Africa. Partial migrant; occurs Egypt in winter.

The typical race "*S. t. torquata*" is S. African.

S. torquata hibernans (Hartert). Like "*rubicola*" but in autumn edges of feathers above darker, more red brown, and also darker below. In summer can only be distinguished by remains of feather tips.

Breeds.—British Isles, Portugal. Partial migrant; has occurred south Spain in winter (Algeciras, Malaga).

S. torquata maura (Pallas).—Lighter above than "*rubicola*"; upper tail coverts white without dark spots; basal part of tail white.

Breeds.—Caucasus, Lower Ural to Orenburg, and N.W. Perm; also W. Asia. Rare Egypt on passage. Winters E. Africa and S. Arabia.

S. torquata indica (Blyth).—Tail as in "*rubicola*," but feather edges of upper parts lighter; upper tail coverts white as in "*maura*."

Breeds.—N.E. Russia (Petchora), Urals to 60°, W. and C. Asia. Winters in India and Afghanistan. Has twice occurred in Britain.

TARSIGER.

Sexes different; rictal bristles well developed; resemble Robins in habits.

Tarsiger cyanurus (Pallas).

♂ Above blue, brighter on lesser wing coverts and upper tail coverts; supercilium white; flanks bright orange; abdomen white, rest of underparts buff. Bill black. Legs and feet dark

brown. Wing 78-80. Tarsus 21-22. Culmen 13-13.5 (H.).
 ♀ Olive brown, throat and abdomen white, flanks rufous, upper tail coverts and tail dull blue. Young spotted.

Breeds.—E. Russia (Perm and Orenburg Govts.), and east across Siberia to Japan. Winters chiefly S.E. Asia.

PHŒNICURUS.

Allied to Robins and Chats; generally with chestnut tail, tail constantly in motion; food, insects, and fruit in autumn; nest in holes of trees, walls, rocks, ruins, or in a bush or hollow in ground (moussieri); eggs pale blue or white.

Phœnicurus phœnicurus phœnicurus (L.). RED-START. *Fr.* Rouge-queue; *Ger.* Gartenrotschwanz; *Ital.* Codiroso; *Swed.* Rödstart.

♂ Crown and back slaty, forehead white; rump, upper tail coverts, tail, breast, flanks, under wing coverts, and axillaries reddish chestnut; lores, occasionally a narrow frontal band, face, and throat black; abdomen white; 3rd to 5th primaries emarginate, 1st longer than coverts, 2nd usually longer than 6th, which is 6-7 m.m. shorter than 5th. In winter, back is browner and under surface is white tipped. ♀ Brown, paler on underparts; rump, upper tail coverts and tail reddish chestnut; under wing coverts and axillaries yellow buff, occasionally throat whitish with black bases and breast sometimes reddish tinged. Bill, legs and feet brownish black. Wing ♂ 76-82, ♀ 75-81. Tarsus 20-22. Bill 8-10.

Breeds.—Europe to far north; British Isles; south to N. Spain, C. Italy, Montenegro, Lower Danube, Russia south to Middle Volga and Urals and east into Siberia. Migrates; occurs on passage in Mediterranean countries, N.W. Africa, Egypt, S. Russia, Caucasus and Asia Minor. Winters in tropical Africa.

P. phœnicurus algeriensis (Kleinschmidt).—Wing rounder; 6th primary 4-5 m.m. shorter than 5th; 2nd not longer, generally shorter than 6th.

Breeds.—Algeria and Morocco, N. and Middle Atlas, Portugal.

P. phœnicurus mesoleuca (Hemprich and Ehrenberg).

♂ Outer webs of secondaries and margins of primaries white, forming large speculum (in some birds almost wanting). In summer, sometimes upper back tinged black. Wing 77-83 (H). ♀ as in ♀ "phœnicurus," sometimes a trace of speculum in wings and in old birds greyer above and below.

Breeds.—Crimea, Caucasus to Persia and Palestine. Occurs Egypt on passage. Winters N.E. Africa, S. Arabia. Accidental in Balkans.

Phœnicurus ochrurus ochrurus (Gmelin).

♂ Crown and rump grey; back, scapulars, face, throat, breast, and upper abdomen black; lower abdomen, tail coverts, and tail reddish chestnut; under wing coverts black and white; axillaries grey mixed with chestnut, sometimes almost pure chestnut; outer margins of secondaries edged white; second primary about equal to 7th, 3rd to 6th emarginate. Bill, legs and feet black. Wing 82-87 (H.). ♀ Brown, paler below and almost white in centre of abdomen; tail as in ♂.

Breeds.—Caucasus to N.W. Persia. Winters in Palestine.

P. ochrurus gibraltariensis (Gmelin). Black Redstart. *Fr.* Rouge queue noir; *Ger.* Hausrotschwanz; *Ital.* Codirosso spazzacamino; *Swed.* Svart-Rödstjert.

♂ Differs from "ochrurus" ♂ in having back dark slate grey, axillaries grey with white edges and lower abdomen grey. ♀ as ♀ "ochrurus" but greyer brown. Wing ♂ 81-88, ♀ 80-84. Tarsus 21.5-24. Bill 8-10.

Breeds.—Europe north to Denmark, east to E. Prussia; Poland, Rumania, Ukraine, Crimea, Bulgaria, Macedonia, and north Mediterranean countries. Partly migratory; occurs on passage and in winter Britain (in small numbers), Mediterranean countries, Egypt.

P. ochrurus semirufus (Hemprich and Ehrenberg). ♂ as ♂ "ochrurus" but all abdomen chestnut and axillaries pure chestnut.

Resident.—Syria and Palestine Mountains and Euphrates Valley. Has occurred in Egypt.

Phoenicurus erythrogaster erythrogaster (Güldenstädt).

♂ Crown, nape, and wing patch white ; lores, face, throat, chest, back and wings black ; underparts, tail coverts, and tail chestnut. Bill, legs, and feet black. Wing 101-106. Tarsus 26. Culmen 16-17.5 (H.). ♀ Brown, tail coverts and tail paler chestnut.

Breeds.—Caucasus and Transcaucasia.

Phoenicurus moussieri (Olphe-Galliard).

♂ Upper parts, frontal band, face and ear coverts black ; bar on forecrown, supercilium, hind collar and wing patch white ; rump, tail coverts, tail and underparts orange red ; 2nd primary between 8th and 9th. Bill, legs and feet black. ♀ Grey brown above, upper tail coverts and tail duller than in ♂, underparts varying brown to almost as red as ♂, wing patch rarely present. Wing ♂ 65-70, ♀ 63-67. Tarsus 23-24. Culmen 13-15 (H.).

Resident.—Morocco, Algeria, and Tunisia. Occurs Saharan oases in winter ; once Heligoland.

LUSCINIA.

Tail slightly rounded, tarsus long. Frequent woods or near woods ; nest near or on ground ; eggs greenish or bluish brown, faintly spotted.

Luscinia megarhyncha megarhyncha Brehm.
NIGHTINGALE. *Fr.* Rossignol ; *Ger.* Nachtigall ; *Ital.* Russignuolo.

♂ ♀ Above olive brown, reddish on upper tail coverts and tail ; beneath white or pale brown, especially on breast and flanks, under tail coverts buff ; 1st primary about 2 m.m. beyond coverts, 2nd between 5th and 6th, 3rd and 4th longest, 3rd and 4th emarginate. Bill dark brown, paler below at base. Legs and feet brown. Wing ♂ 80-89, ♀ 78-83. Tarsus 25-27. Bill 10-12. Tail 68-72.

Breeds.—England, Continental Europe north to Denmark, plains of Germany and Poland west of Vistula, Carpathians, Hungary, S.W. Russia to Crimea ; Asia Minor, Palestine,

N.W. Africa. In Mediterranean Islands chiefly on passage, but some breed Sicily, Sardinia, Corsica, Crete. Migrates ; winters tropical Africa.

L. megarhyncha golzii (Cabanis). Paler, greyer than "megarhyncha" ; tail longer, 82-88. Wing ♂ ♀ 91-95 (H.).

Breeds.—Western Asia. Has occurred at Orenburg.

"L. m. corsa" Parrot (brownish grey on breast and flanks), described from Corsica, does not appear separable from typical form.

Luscinia luscinia (L.). THRUSH NIGHTINGALE. *Ger.* Sprosser ; *Swed.* Näktergal.

♂ ♀ Upper parts darker than in "megarhyncha" and less red especially on tail ; brown of underparts darker, olive tinged ; 1st primary shorter than coverts, 3rd longest, 2nd about equal to 4th. Wing 84-92 (H.). Tarsus 25-28. Bill 10-12.

Breeds.—S. and C. Sweden, Denmark (except N. and W. Jutland), S. and S.E. Finland, Germany (Baltic Coast to E. Prussia), Poland E. of Vistula, Silesia, Rumanian Mountains, S. and C. Russia from Orenburg and Ufa south to Volga Delta and Crimea, N. Caucasus ; also W. Siberia. Occurs on passage Bulgaria, Asia Minor, Egypt. Winters S. Arabia and E. Africa. Has occurred British Isles, Switzerland, Italy.

Luscinia calliope (Pallas). SIBERIAN RUBY-THROAT.

♂ Above olive brown ; supercilium and rictal stripe white, lores black ; throat scarlet ; chest grey, rest of underparts brown, middle of abdomen whitish. Bill in winter brown, paler at base below ; in summer, black. Legs and feet greyish brown. Wing 74-83. Tarsus 31-33. Culmen 15-18 (H.). ♀ Supercilium buff colour, throat white.

Breeds.—E. Russia, Perm Govt. south to Irbit ; and through Siberia to China and Kamtschatka. Winters S. Asia. Has occurred France, Italy, Orenburg, Caucasus.

Luscinia suecica suecica (L.). RED-SPOTTED BLUE-THROAT. *Fr.* Gorge bleue à tache rouge ; *Ger.* Blaukelchen ; *Ital.* Pett'azzurro a macchia rossa ; *Swed.* Blåhake-sångaren.

♂ summer. Above brown ; throat and upper breast blue, red spot in centre ; beneath the blue a black band and then

a chestnut one ; abdomen white, flanks greyish brown ; basal half of tail chestnut ; distance from tip of secondaries to tip of wing ♂ 10-16 m.m., ♀ 9-14 ; 2nd primary equal to 6th or between 6th and 7th. Bill dark brown, paler at base below. Legs and feet brown. Wing ♂ 69-74, ♀ 65-74. Tarsus 25-28. Bill 9-11. After autumn moult, throat is whitish with some blue showing and breast bands are tipped with white. ♀ much the same as ♂ after autumn moult, but throat buffish with a dark stripe on each side and across breast and occasional traces of blue and rufous.

Breeds.—N. Sweden, Lapland and N. Russia ; also tundras of W. Siberia. Migrates across E. Europe and Transcaspia and winters in Egypt and N.E. Africa ; very rare W. Europe.

L. suecica gaetkei (Kleinschmidt). Larger. Wing more pointed, distance from secondaries to wing tip, ♂ 15-19, ♀ 14-17. Wing ♂ 74-78, ♀ 70-73.

Breeds.—Mountains of Norway. Occurs on passage British Isles, Heligoland, Holland and W. Europe.

L. suecica pallidogularis (Sarudny). Blue of throat paler and also upper parts. Wing ♂ 71-75 (H.). 2nd primary between 6th and 7th, or 7th and 8th.

Breeds.—E. Russia (Orenburg) and Transcaspia to Turkestan. Winters in Egypt and India.

L. suecica cyanecula (Wolf). White-spotted Bluethroat. ♂ Like "suecica" ♂ but blue of throat somewhat darker and central spot is white ; sometimes white is obscured by blue tips, making throat all blue. Wing ♂ 74-78, ♀ 72-74. Tarsus 25-27. Bill 10-11. ♀ as ♀ "suecica."

Breeds.—Denmark (rare), Holland (local), Belgium (rare), N. and C. France, across Mid Europe to W. Russia. Occurs on passage Rumania, Balkans (except Greece), Italy, Spain, Egypt, and N.W. Africa ; has occurred Canaries. Rare visitor to Britain, Malta, Sardinia, Corsica.

L. suecica volgæ (Kleinschmidt). ♂ Central throat spot smaller than in "cyanecula," variable in colour, generally white, but sometimes red or mixed.

Breeds.—S. Russia, Poltava to Lower Volga and north to Sarpa R. ; also Transcaspia. Winters in Egypt.

L. suecica magna (Sarudny and Loudoun). Throat blue without any spot, or only faint indications of white. Wing 82. Tarsus 28. Bill (from feathers) 17·1, (from gape) 18·3 (H.).

Breeds.—S.W. Persia, Arabistan, Armenia. Occurs Egypt on spring passage.

ERITHACUS.

Like "*Luscinia*" but tail square or slightly emarginate, middle tail feathers usually slightly shorter than the rest.

Erithacus rubecula rubecula (L.). REDBREAST. *Fr.* Rouge-gorge; *Ger.* Rothkehlchen; *Ital.* Pettiroso; *Swed.* Rödhake-Sångaren.

♂ ♀ Above olive brown, upper tail coverts slightly rusty brown; frontal band, face, throat, and breast orange red; abdomen white; sides of neck and breast blue grey; flanks tinged olive brown. Bill blackish brown, pale below at base. Legs and feet brown. Wing ♂ 70-75, ♀ 68-73. Tarsus 24-26. Bill 8-10. Young: no red breast, brown above with yellowish spots, buff below with dark markings.

Breeds.—Continental Europe north to about Arctic Circle, east to Urals; and S.W. Siberia, Sicily, Azores. Resident Madeira, Gomera, Hierro, Palma (Canary Islands). Partial migrant elsewhere; occurs on passage Britain, Mediterranean Coasts and Isles, Egypt, N.W. Africa. Many winter S. and C. Europe.

E. rubecula melophilus Hartert. Above darker and more olive with a rufous tinge; beneath orange red much darker, olive brown of flanks deeper and broader leaving less white on abdomen; upper tail coverts rufous brown. Wing ♂ 70-77, ♀ 69-74.

Breeds.—British Isles, Portugal. Partial migrant; has occurred in winter Italy, N.W. Africa, Algeria; and "ringed birds" S. Holland and S.W. France.

E. rubecula sardus Kleinschmidt. Darker above than "*rubecula*," more olive coloured, upper tail coverts like back.

Breeds.—Sardinia and Corsica.

E. rubecula witherbyi Hartert. Close to "melophilus" but upper parts more as in "rubecula" and not so dark as "sardus"; breast as in "melophilus." Wing ♂ 68-71, ♀ 67-69.

Breeds.—Tunisia, N. Algeria, N. Morocco, S. Spain.

E. rubecula atlas Lynes. Upper parts including rump dark earthy olive green. Bill longer. May prove to be identical with "witherbyi."

Breeds.—Middle Atlas, Morocco.

E. rubecula superbus Koenig. Above darker than "rubecula," less rufous than "melophilus"; orange red of throat and breast very dark; inner margins of quills yellowish. Wing ♂ ♀ 65-72 (H.).

Resident.—Tenerife, Gran Canaria (Canary Islands).

E. rubecula caucasicus Buturlin. Greyer and less olive above than "rubecula"; upper tail coverts reddish; bill longer than in "rubecula." Is intermediate between "rubecula" and "E. r. hyrcanus" of N. Persia.

Breeds.—Caucasus. Occurs in winter in Transcaucasia.

E. rubecula xanthothorax Salvadori and Festa. Olive brown above like "sardus" but upper tail coverts rusty; red of breast and forehead yellower.

Breeds.—Rhodes; possibly other Greek Islands.

PRUNELLIDÆ.

Bill hard, broad at base, with swollen sides and round top; nostrils free, covered with membrane; wing rounded, 1st primary very short; stomach muscular as in Finches; plumage hard and thick; young in 1st plumage spotted.

PRUNELLA.

Characters as in Order.

Nest in clefts of rocks or in bushes; eggs greenish blue; are granivorous as well as insectivorous.

Prunella collaris collaris (Scopoli). ALPINE ACCENTOR. *Fr.* Fauvette des Alpes; *Gcr.* Alpenbraunelle; *Ital.* Sordone.

♂ ♀ adult. Above grey brown with darker striations, faint on rump and upper tail coverts, wing coverts with white tips,

scapulars and quills with rufous margins ; throat white, tipped dark grey ; upper breast brownish grey, abdomen lighter, sides of lower breast and flanks chestnut with white edges. Bill brownish black, yellow at base below. Legs and feet red brown. Wing ♂ 103-108, ♀ 95-103 (H.). Tarsus 23-27. Bill 10-12.

Breeds.—Alpine regions of C. and S. Europe, but not S.E. Europe or Caucasus. Winters in plains and valleys. Rare visitor to Britain, Heligoland, Belgium.

P. collaris subalpina (Brehm). Above grey without brown tinge, chestnut beneath paler and more restricted to flanks.

Breeds.—Balkan Peninsula, Dalmatia and Bosnia to Greece and Crete.

P. collaris caucasica (Tschusi). Like "subalpina" but redder above, rump and upper tail coverts not striated, flanks as in "collaris."

Breeds.—Caucasus and Asia Minor. Occurs in winter S.W. Persia.

Prunella montanella (Pallas).

♂ ♀ Crown and face black, back dark red brown, rump and tail olive brown ; supercilium, throat and underparts dark ochreous buff with black bases and purple brown streaks on flanks ; a grey spot on sides of neck. Bill blackish brown. Legs and feet flesh colour. Wing ♂ 75-78, ♀ 70-72. Tarsus 19-21. Culmen 13.5-15 (H.).

Breeds.—Mountains of Central Asia and W. Siberia from Urals eastwards. Occasional in Europe in Ural Mountains, and on passage in Crimea ; has occurred Italy and Austria.

Prunella atrigularis (Brandt).

♂ ♀ Upper parts ashy brown with dark stripes, head and throat black, supercilium white, chest and flanks ochreous, the latter striped brown, abdomen white. In autumn, black of throat obscured by ochreous tips. Bill dark horn. Legs and feet brown. Wing ♂ 72-75, ♀ 69.5-71.5 (H.).

Breeds.—Central Asia. Occurs E. Russia (Orenburg) on passage and in winter.

Prunella modularis modularis (L.). HEDGE-SPARROW.
Fr. Mouchet ; *Ger.* Heckenbraunelle ; *Ital.* Passera scopaiola ; *Swed.* Jernsparf.

♂ ♀ Above red brown, greyer on crown, dark spots on head, scapulars and back; rump, upper tail coverts and vent olive brown; beneath grey, flanks browner with dark striations; 2nd primary longer than 7th by at least 2.4 m.m. Bill black brown, paler below at base. Legs and feet light brown. Wing ♂ ♀ 65-70. Tarsus 19-21. Bill 9-10.

Breeds.—Continental Europe to about 70° N.; east to Urals, south to N. Spain, Mountains of Italy, Corsica, Sardinia; also Asia Minor. Partial migrant; occurs on passage British Isles. Rare in N.W. Africa.

P. modularis occidentalis (Hartert). Throat and breast darker, flanks darker, striations less conspicuous; 2nd primary equal to or 1-2 m.m. longer than 7th. Bill stouter.

Breeds.—British Isles. Mostly resident, some migrate.

P. modularis obscura Tratz. Almost uniform deep dark brown on crown and nape; back darker than in "modularis," resembling "occidentalis," but underparts paler than latter form; wing as in "occidentalis"; bill shorter.

Breeds.—N. Portugal.

"P. m. mabbotti" Harper has been described from E. Pyrenees; greyer than "modularis" and "occidentalis," 2nd primary equal to 7th; but its status is very doubtful, as is that of "occidentalis" and "obscura," the wing distinction being not constant.

P. modularis orientalis (Sharpe). Crown less grey than in "modularis," more uniform with back; underparts browner with paler margins, giving a scale-like appearance on breast. Wing formula as in "occidentalis." Bill as in "modularis."

Breeds.—S. Caucasus and Transcaucasia.

TROGLODYTIDÆ.

Bill narrow, elongated; rictal bristles scanty or absent; nostrils free, partly covered by membrane; wing short and rounded, 1st primary well developed; plumage soft and thick.

TROGLODYTES.

Legs and feet strong; sexes alike; nest domed; eggs white, red spotted.

Troglodytes troglodytes troglodytes (L.). WREN.
Fr. Roitelet ; *Ger.* Zaunkönig ; *Ital.* Scricciolo ; *Swed.* Gårdsmyg.

♂ ♀ Above red brown, with narrow dark bars on wings and tail and also on back in some ; beneath brownish cream, barred generally only on flanks and abdomen ; 2nd primary as long as longest secondary. Bill dark brown above, pale horn below. Legs and feet pale brown. Wing ♂ 45-50, ♀ 45-47. Tarsus 17-18.5. Bill 9-10.

Breeds.—British Isles ; Continental Europe north to about Arctic Circle, east to Urals, south to Orenburg, Volga, and Mediterranean. Resident except extreme north ; in S. Europe chiefly in mountains.

T. troglodytes islandicus Hartert. Much larger and with a stronger bill ; above darker brown. Wing ♂ 60. Tarsus 21. Bill 11.
Resident.—Iceland.

T. troglodytes borealis Fischer. More olive brown than "troglodytes," also somewhat larger. Wing ♂ 49-55 (H.). Tarsus 20.

Resident.—Faroe Islands.

T. troglodytes zetlandicus Hartert. Upper parts, especially crown, darker than in "troglodytes." Bill thicker and stronger. Wing ♂ 49-53, ♀ 47-52. Tarsus 19-20. Bill 11-12.

Resident.—Shetland Isles.

T. troglodytes hirtensis Seebohm. Paler than "troglodytes," supercilium whiter, barring both above and below heavier. Bill thicker and stronger. Wing ♂ 51-53, ♀ 47-52. Tarsus 18-19. Bill 10-11.

Resident.—St Kilda.

T. troglodytes kabyorum Hartert. Bill longer and stronger than in "troglodytes" ; upper parts less rufous and less barring beneath. Wing ♂ 44-46, ♀ 41. Tarsus 17-19. Bill 10-11.

Resident.—N.W. Africa (Tunis to Morocco), Balearic Islands, S. Spain (Algeciras).

T. troglodytes koenigi Schiebel. Closely resembles "kabyorum" ; 2nd primary longer than secondaries ; flanks usually strongly barred.

Resident.—Corsica and Sardinia.

T. troglodytes hyrcanus Sarudny and Loudoun. Intermediate between "troglodytes" and "T. t. pallidus" of C. Persia; paler than former and more distinctly barred; 2nd primary equal to longest secondary.

Resident.—Caucasus, N. Persia to Talysch; possibly also Crimea.

CINCLUS.

Allied to Wrens; tail short; bill straight with a slight upward bend from nostrils; nest domed; eggs white; frequent running water.

Cinclus cinclus cinclus (L.). DIPPER. *Fr.* Aguassière; *Ger.* Wasserschwätzer; *Ital.* Merlo acquaioolo; *Swed.* Strömstare.

♂ ♀ Above slate grey with black scale-like margins; crown, face, and hind neck chocolate brown; throat and upper breast white; flanks and under tail coverts slaty grey; rest of underparts blackish brown, with a slight reddish tinge at junction with white of breast. Bill blackish. Legs and feet brown. Wing ♂ 94-98, ♀ 88-91. Tarsus 28-30 (H.). Bill 14-16.

Breeds.—Scandinavia to above Arctic Circle, Lapland, Finland, Russia north to 65° and east to Urals, Baltic Provinces; also Picos de Europa, N. Spain (Witherby). Chiefly resident; a few occur in winter E. Russia and Germany, very rare elsewhere, several times in England, once in Shetland.

C. cinclus britannicus Tschusi. Above like "cinclus" but beneath there is a cinnamon band between the white breast and dark abdomen. Wing ♂ 87-95, ♀ 84-92.

Resident.—Great Britain.

C. cinclus hibernicus Hartert. Like "britannicus" but upper parts darker, less slate grey and cinnamon band between breast and abdomen narrower.

Resident.—Ireland.

C. cinclus pyrenaicus Dresser. Like "cinclus" but paler above, crown lighter and black margins narrower; generally a little chestnut on lower breast, but often not.

Resident.—Pyrenees.

Spanish birds (C. and S. Spain) are redder on head and have more chestnut on breast; they do not agree with either "aquaticus" or "meridionalis."

C. cinclus aquaticus Bechstein. Very near "britannicus" but head is paler and margins on upper feathers narrower.

Resident.—Belgium, France (except S.E.), N. Switzerland, Germany, Poland, Carpathians, Transylvanian Alps, N. Rumania.

C. cinclus meridionalis Brehm. Close to "aquaticus" but crown and upper parts still paler, chestnut of underparts occasionally brighter and more extended, but not constant.

Resident.—S.E. France, S. Switzerland, Italy, Sicily, Austria, Croatia, Balkan Peninsula. Has occurred on Mediterranean Coast of Egypt.

"*C. cinclus orientalis*" Stresemann has been described from Macedonia; head and neck darker and breast lighter than "meridionalis," but requires further confirmation.

C. cinclus sapsworthi Arrigoni. Beneath like "cinclus"; above, crown and hind neck paler and greyer even than in "pyrenaicus." Wing ♂ 88-92, ♀ 81-83 (H.).

Resident.—Corsica and Sardinia.

C. cinclus minor Tristram. Bill about 2 m.m. longer; cinnamon band brighter and redder than in "meridionalis."

Resident.—Atlas Mountains, Algeria and Morocco.

C. cinclus caucasicus Madarasz. Nearest to "aquaticus" but brown of breast and abdomen lighter, with a tinge of cinnamon nearest the white.

Resident.—Caucasus to N. and S.E. Persia, Asia Minor, Cyprus.

HIRUNDINIDÆ.

Bill short, triangular; gape very wide; tarsus very short; wing with 9 primaries visible; food, insects captured while flying.

HIRUNDO.

Feet not feathered; outer tail feather much lengthened; nest of mud; eggs white, red spotted or pure white.

Hirundo rustica rustica L. SWALLOW. *Fr.* Hirondelle; *Ger.* Schwalbe; *Ital.* Rondine; *Swed.* Ladusvala.

♂ ♀ Above steel blue; beneath buffy white to reddish cream; forehead and throat chestnut; gorget steel blue; diagonal white patches on inner webs of tail feathers; tail much forked, outer feathers about 47 m.m. longer than next. Bill black. Legs and feet dark brown. Wing 120-126. Tarsus 12-13. Bill 6-7.

Breeds.—All Europe (including British Isles), W. Siberia, N.W. Africa to Sahara, Asia Minor, Caucasus and east to Himalayas. Migrates; occurs on passage Egypt, Malta, Canaries. Winters C. and S. Africa, India.

H. rustica transitiva Hartert. Closely resembles "rustica" with reddish underparts, but always darker, most marked on under tail coverts. Intermediate between typical form and "savignii."

Breeds.—Coast region of Palestine. Partly resident, some migrate; has occurred in Egypt in winter and been reported from Uganda at the same season.

H. rustica savignii Stephens. Underparts reddish chestnut, almost as deep as on throat; patches on tail feathers pale red.

Resident.—Egypt and Nubia.

Hirundo daurica rufula Temminck. RED-RUMPED SWALLOW.

♂ ♀ Above steel blue, hind collar and rump pale chestnut; beneath reddish buff with narrow dark shaft-streaks. Bill black. Legs and feet brown. Wing ♂ 117-126, ♀ 115-123 (W.). Tarsus 13-14. Bill 5-6.

Breeds.—Greece, Cyprus, Asia Minor and east to Afghanistan; Morocco; also probably in S. Spain near Tarifa, Sicily, and S. Italy. Occurs Tunisia, W. Algeria and Egypt on passage; doubtful if breeds. Has occurred S. France, S. England, Heligoland, and Fair Isle.

The typical race "H. d. daurica" is E. Siberian.

DELICHON.

Tail forked, but outside feather not elongated; tarsus and toes feathered; eggs white.

Delichon urbica urbica (L.). MARTIN. *Fr.* Hirondelle de fenêtre; *Ger.* Hausschwalbe; *Ital.* Balestruccio; *Swed.* Hussvala.

♂ ♀ Above steel blue; rump and underparts white. Bill black. Legs and feet feathered white. Wing ♂ ♀ 108-113. Tarsus 10-12. Bill 4-5.

Breeds.—British Isles, Europe north to Finmark, east to Mid Siberia, south to Turkestan, Caucasus and Mediterranean. Migrates; occurs on passage Faroes, Malta, Canaries, N. Africa. Winters in India and S. Africa.

D. urbica meridionalis (Hartert). Smaller than "urbica." Wing 100-106 and secondaries longer in proportion to primaries.

Breeds.—Algeria, Tunisia and Morocco. Birds from S. Spain (Algeciras) are chiefly referable to this race. Occurs on passage Egypt in spring; not common.

RIPARIA.

Feet not feathered; tail slightly forked or almost square; nest in holes in bank or of mud in cliffs; eggs pure white, or spotted with red.

Riparia riparia riparia (L.). SAND MARTIN. *Fr.* Hirondelle de rivage; *Ger.* Uferschwalbe; *Ital.* Topino; *Swed.* Backsvala.

♂ ♀ Above dark brown; underparts white crossed by a pale brown pectoral band. Legs bare, except for a tuft of short white feathers on back of tarsus above hind toe. Bill black. Legs and feet dark brown. Wing ♂ ♀ 102-111. Tarsus 10. Bill 5-6.

Breeds.—British Isles and Continental Europe to farthest north, east to Urals and in Siberia to Pacific; south to Caucasus

and Mediterranean ; also Asia Minor and in N. Africa (Tunisia and Algeria) ; in Mediterranean Islands chiefly on passage, some breed Sicily and Balearic Islands ; also breeds in N. America. Winters S. Arabia, E. and S. Africa, and S. America.

R. riparia littoralis (Heuglin). Above slightly paler than "riparia" ; pectoral band narrower and paler. Smaller. Wing 90-97 (H.).

Breeds.—Egypt and Nubia. Some winter there.

R. riparia diluta (Sharpe and Wyatt). Upper parts and pectoral band paler. Wing ♂ ♀ 97-106.5 (Ticehurst).

Breeds.—Afghanistan to N. Siberia. Occurs Egypt on passage, and in winter in S.W. India.

Riparia paludicola mauritanica (Meade-Waldo).

♂ ♀ Somewhat resemble "R. r. riparia" but throat as well as pectoral band pale brown. Bill and feet dark slate. Wing ♂ 103-109, ♀ 101-108. Tarsus 10. Culmen 8-9 (H.).

Resident.—W. Morocco (Wadi Moor-bey).

The typical race "R. p. paludicola" is S. African.

Riparia rupestris (Scopoli). CRAG MARTIN. *Fr.* Hirondelle de rochers ; *Ger.* Felsenschwalbe ; *Ital.* Rondine montana.

♂ ♀ Above light brown ; beneath paler with reddish buff tinge, and on upper throat fine brown spots ; tail feathers (except outer pair) with an oval white patch on inner web. Bill black. Legs and feet pale pinkish flesh. Wing ♂ ♀ 124-136 (H.). Tarsus 11-12. Bill 5-6.

Breeds.—S. Europe ; Mediterranean Coasts and Islands, Montenegro, Albania, S. Russia, Caucasus ; and Asia east to China. Resident except in north of breeding range ; occurs on passage in Egypt and Algeria, and in winter India and N.E. Africa.

Riparia obsoleta obsoleta (Cabanis).

Paler than "rupestris" and smaller ; upper throat uniform, unspotted. Wing 115-122 (H.).

Breeds.—Egypt and Nubia, east to W. India. Resident.

CYPSELI.

Related to Nightjars but not to Swallows, to which they have a superficial resemblance. Humerus very short; wing long, 10 primaries; 10 tail feathers; gape very wide; feet short and strong with strong claws.

CYPSELIDÆ.

Phalanges of outer and middle toes reduced to 3.

MICROPUS.

Toes 4, all pointing forwards for clinging; constantly hawking insects by day; nest in holes and crevices in cliffs, caverns, and walls; eggs white.

Micropus melba melba (L.). ALPINE SWIFT. *Fr.* Martinet à ventre blanc; *Ger.* Alpensegler; *Ital.* Rondone di mare.

♂ ♀ Above brown; beneath white with brown breast band, under wing and under tail coverts; tail forked. Bill blackish. Tarsus feathered. Feet dull yellowish brown, claws black. Wing 213-225. Tarsus 14-16. Bill 9-10. Fork of tail 22-24.

Breeds.—Mountains and Towns of S. Europe, from Pyrenees, Alps, and Transylvania to Mediterranean and Islands, Crimea, Caucasus; S.W. Asia east to Himalayas, S. India and Ceylon; also N.W. Africa. Migrates; occurs Egypt on passage; winters tropical Africa and S. India. Occurs exceptionally in C. Europe to Denmark and Britain.

M. melba tuneti (Tschusi). Paler and lighter in colour.

Breeds.—Tunis to Palestine.

Micropus apus apus (L.). SWIFT. *Fr.* Martinet noir; *Ger.* Mauersegler; *Ital.* Rondone nero; *Swed.* Ringsvala.

♂ ♀ Brown with a strong bottle-green tinge, chin and upper throat white; 1st primary usually 1.5 m.m. shorter than 2nd, rarely equal. Bill black. Tarsus feathered in front, bare behind.

Feet and claws black. Wing 165-178. Tarsus 10-11. Bill 5-6. Fork of tail about 32.

Breeds.—All Europe, Russia east to Urals; N.W. Africa (Morocco to Tripoli); Palestine. Migrates; occurs Egypt and Canaries on passage. Winters tropical and S. Africa. Replaced in N. Asia by a browner race ("pekinensis").

"*M. apus kollibayi*" (Tschusi) (wing averages longer and throat whiter than in "*apus*") has been described from S. Dalmatia; and "*M. apus carlo* (Kollibay) (more white on throat) has been described from Tunisia, but both these forms are of very doubtful validity.

M. apus marwitzi (Reichenow). Resembles "*pekinensis*," browner than "*apus*"; forehead darker than in former race.

Breeds.—S. Caucasus and Asia Minor. Occurs Egypt and Palestine on passage. Has been found in S.W. Africa in winter.

Micropus murinus murinus (Brehm). PALLID SWIFT.

♂ ♀ Paler than "*apus*," more brown grey, with little or no gloss, forehead paler and white on throat more extensive; 1st primary generally equal to 2nd, sometimes even longer, occasionally a little shorter. Bill black. Feet purplish brown.

Breeds.—Egypt, through Persia to N.W. India. Resident in Egypt.

M. murinus brehmorum (Hartert). Darker brown than in "*murinus*." Wing 164-175 (H.). Bill 6. Fork of tail about 26.

Breeds.—Madeira, Canaries, Morocco, Algeria, Tunis. Winters in South Africa. Rare visitor to Malta and Italy.

M. murinus illyricus (Tschusi). Like "*brehmorum*" but darker and with a greenish gloss, but much less so than in "*apus*."

Breeds.—Dalmatia, Croatian Coast, Cyprus, Balearic Islands, S. France, S. Spain (very local). Occurs Canaries on passage.

Micropus unicolor unicolor (Jardine).

♂ ♀ Resembles "*apus*" in wing formula, but is smaller and darker, throat greyer; occasionally has faint pale margins on underparts irrespective of season. Bill black. Wing 150-155. Tail deeply forked (about 30 m.m.) (H.).

Breeds.—Madeira, Canaries (W. Group and Fuerteventura). Chiefly migratory; some may winter.

Micropus affinis galilejensis (Antinori).

♂ ♀ Black with a greenish gloss, head and neck brown, chin, throat and rump white; tail almost square. Bill and feet black. Wing 132-140 (H.).

Breeds.—Morocco, S. Algeria, S. Tunisia, Palestine, east to Persia and N.W. India. Has occurred in Italy.

The typical form "*M. a. affinis*" is found in tropical India and Africa.

CHÆTURA.

Shafts of tail feathers prolonged beyond webs; tarsus bare; 3 toes in front and 1 behind.

Chætura caudacuta caudacuta (Latham). NEEDLE-TAILED SWIFT.

♂ ♀ Above brown, paler, almost white, in middle of back; head and nape, wings and tail glossy greenish black; below sooty brown, darker on flanks; chin, throat and under tail coverts white. Bill black. Legs and feet dull purple. Wing 196-211 (H.).

Breeds.—E. Siberia to Japan. Winters in Australia. Has occurred twice in Britain.

CAPRIMULGI.

Plumage very soft; eye large; gape wide; rictal bristles very long; middle toe pectinated.

CAPRIMULGIDÆ.

Characters those of the Order.

CAPRIMULGUS.

Grey-brown birds allied to Swifts. Wing very long; nocturnal or crepuscular in habits, flight noiseless; hawk insects; no nest; eggs, usually 2, laid in hollow on ground.

Caprimulgus europæus europæus L. NIGHTJAR.
Fr. Engoulevent; *Ger.* Zeigenmelker; *Ital.* Nottolone; *Swed.* Nattskärra.

♂ Above grey, vermiculated and streaked with black and warm buff; upper tail coverts and tail barred black; beneath, abdomen, under tail coverts and under wing coverts buff barred black; on each side of throat a white patch; 1st, 2nd and 3rd primaries with a large white spot on inner web; two outer pairs of rectrices white tipped for about 35 m.m. Bill black. Legs and feet reddish brown. Wing ♂ ♀ 190-200. Tarsus 16-17. Bill 8-9. ♀ White spots on primaries and white tips tail feathers replaced by rusty yellow, marbled brown.

Breeds.—British Isles and C. Europe north to about 64°, uncommon Denmark; in Russia east to Urals and Orenburg, but rare in S.E. (Astrakhan). Migrates; occurs Hungary, Balkans, Mediterranean Islands, Caucasus, Spain and N. Africa (Egypt to Morocco) on passage. Winters Africa south to Cape Colony.

C. europæus meridionalis Hartert. Like typical "europæus" but smaller. Wing ♂ 174-186 (H.).

Breeds.—S. Europe; Spain, Corsica, Sardinia, S. Italy, Hungary and Rumania to Greece and Balkans, also Crimea, Caucasus, and Asia Minor; and N.W. Africa (Morocco to Tunisia). Occurs Egypt on passage; winters in Africa.

C. europæus unwini Hume. Paler than "europæus," more sandy grey above; spots on inner webs of primaries larger, in 1st reaching the shaft, in 2nd and 3rd extending to both webs; under tail coverts usually faintly barred, sometimes uniform. Wing shorter, ♂ 180-186 (H.).

Breeds.—S.W. Asia, east to Kashmir. Has occurred at Orenburg, E. Russia, and in winter in Natal (S. Africa).

C. europæus sarudnyi Hartert. Intermediate between "unwini" and "europæus"; white spots on primaries as in "unwini" but colour above as in "europæus"; also intermediate in size. Wing ♂ 181-196 (H.).

Breeds.—C. Asian Mountains. Occurs Egypt on passage.

Caprimulgus ruficollis ruficollis Temminck. RUFOUS-NECKED NIGHTJAR.

♂ Larger than "C. e. europæus" and more rufous, especially beneath; collar rufous; on throat distinct white patch black tipped.

Bill black. Legs and feet dark brown. Wing ♂ 205-212 (H.), ♀ slightly shorter. Tarsus 19-23. Bill 10. ♀ differs from ♀ of "europæus" in having the white spots on primaries and white tips to tail feathers as in ♂, white tips, however, are shorter (about 25 m.m.).

Breeds.—Morocco, S. Spain, Portugal. Rare elsewhere in Europe, obtained once in England. Migratory; occurs in winter in Sahara.

C. ruficollis desertorum Erlanger. Paler rufous than "ruficollis" and with fewer black markings above; less barred beneath. Wing ♂ 195-204, ♀ 187-202 (W.).

Breeds.—Tunisia and Algeria, north of Atlas. Migratory.

Caprimulgus ægyptius ægyptius Lichtenstein.

♂ ♀ Above sandy grey, tinged reddish, irregularly vermiculated with reddish buff and black; inner webs primaries white with black indentations and tip sandy colour; beneath dull buff distinctly but narrowly barred. Bill dark brown. Legs and feet reddish brown. Wing ♂ 184-211, ♀ 190-208. Tarsus 21-23. Bill 8-9 (W.).

Breeds.—Egypt and Nubia to S.W. Asia. Of occasional occurrence Malta; twice Sicily, once England and Heligoland. Migrates, but found in Egypt in winter.

C. ægyptius saharæ Erlanger. Redder than typical form, more sandy; less marked with black on upper parts; bars on underparts very faint.

Breeds.—Algeria and Tunisia to Egypt, west of Nile.

MEROPES.

Feet syndactylous, 3rd and 4th toes united to last joint, 2nd and 3rd on basal joint; primaries 11, 1st very short; rictal bristles very small; bill long, slightly curved; nest in tunnels in ground; eggs white.

MEROPIDÆ.

Characters those of the Order.

MEROPS.

Tail slightly rounded, middle tail feathers prolonged beyond others.

Merops apiaster L. BEE-EATER. *Fr.* Guépier vulgaire ; *Ger.* Bienenfresser ; *Ital.* Gruccione.

♂ ♀ Forehead white, crown, hind neck and upper back chestnut ; lower back and scapulars brownish yellow, primaries blue ; wing coverts and secondaries (latter black tips) cinnamon ; beneath bluish green ; throat yellow, then a black band ; ear coverts black ; central tail feathers exceed others by about 25 m.m. Bill black. Legs and feet greyish to reddish brown. Iris crimson. Wing ♂ 144-156, ♀ 138-148 (W.). Tarsus 11-13. Bill 31-35.

Breeds.—S. and S. Central Europe, north to S. France, N. Italy, Transylvania, S. Russia, north to Moscow and Orenburg ; Mediterranean Islands, N.W. Africa, Asia Minor and W. Asia, east to Kashmir. Of occasional occurrence farther north in Europe to Britain and Sweden. Migrates ; occurs on passage Madeira, Canaries, Malta, Egypt. Winters in Africa to Cape, and in S. Arabia.

Merops persicus persicus Pallas.

♂ ♀ Green, with blue tinge on upper tail coverts ; base of bill white ; forehead and supercilium blue ; through eye a black line ; cheeks blue mixed white ; ear coverts brown, chin yellow ; throat and under wing coverts cinnamon ; two central tail feathers exceed others by 50-60 m.m. in ♂ (in ♀ 40-50 m.m.). Bill black. Legs and feet dark brown. Iris crimson. Wing ♂ 140-160, ♀ 142-150. Tarsus 12. Bill 36-40 (H.).

Breeds.—Egypt, Mesopotamia and S.W. Asia to N.W. India ; also Ural and Volga districts near Caspian Sea. Occurs on passage in Palestine. Winters S. Arabia and Africa. Rare visitor to Mediterranean countries of Europe.

M. persicus chrysocercus Cabanis and Heine. Central tail feathers longer, 90-100 m.m. beyond others ; white on cheeks faint or absent ; green colour of body tinged faint yellow.

Breeds.—N. Sahara of Algeria and Tunisia. Migrates ; winters in Senegambia and Lake Tchad country.

Merops orientalis cleopatra Nicoll.

♂ ♀ Green, with a slight bronzy brown tinge on head and neck; quills same colour with green outer webs and black tips; central tail feathers 70-90 m.m. longer than rest; black bar on throat. Bill black. Legs and feet greyish brown. Wing 90-95. Bill 24-26 (H.).

Breeds.—Egypt. Occurs in winter south to White and Blue Niles.

The typical race "*M. o. orientalis*" is Indian.

UPUPÆ.

Bill long, slender, slightly curved; 3rd and 4th toes united to first joint; 10 tail feathers; nest in holes in walls or trees; eggs greenish blue to greyish olive.

UPUPIDÆ.

Nostrils open rounded. Tail shorter than wing. Crested; no metallic gloss in plumage.

UPUPA.

Characters as in "Upupidæ."

Upupa epops epops L. HOOPOE. *Fr.* Huppe; *Ger.* Weidehoff; *Ital.* Bubbola; *Swed.* Härfogel.

♂ ♀ Vinous isabelline; crest cinnamon black tipped; back, scapulars and secondaries black with broad white bars; primaries and tail with a broad white band. Bill blackish, greyish at base below. Legs and feet greyish blue. Wing 139-154. Tarsus 22-24. Bill 43-52.

Breeds.—S. and C. Europe north to Holland, Belgium, France, Germany, Poland, Russia to about 55°; Caucasus, Canaries, N.W. Africa; also across W. Asia to Himalayas; occasionally nests S. England; rare Sweden and Norway. Migrates; occurs regularly in British Isles, chiefly spring. Winters in tropical Africa and east to S. India. Formerly bred Denmark. Rare visitor Iceland, Faroes, Azores; once recorded Spitzbergen.

U. epops major Brehm. Similar to typical form, but bill longer and stronger, about 6 m.m. longer; upper parts duller, more vinous.
Resident.—Egypt, from Delta to Assouan.

CORACIÆ.

Bill short and strong, tip decurved; 10 primaries; tail feathers 12; nest in holes in trees or buildings; eggs white.

CORACIIDÆ.

Characters as in the Order.

CORACIAS.

Bill hard, straight, narrower at base than long; rectal bristles few and short.

Coracias garrulus garrulus L. ROLLER. *Fr.* Rollier; *Ger.* Mandelkrähe; *Ital.* Ghiandaia marina; *Swed* Blåkråkå.

♂ ♀ General colour light blue; lesser wing coverts, under surface of quills, rump and shorter upper tail coverts dark blue; back, scapulars and inner secondaries cinnamon. Bill dark horn brown. Legs and feet yellowish. Wing ♂ 192-205, ♀ 183-205. Tarsus 23-24. Bill 26-30.

Breeds.—Continental Europe from about 61° in Norway and Russia to Mediterranean, Caucasus, Asia Minor, and Mesopotamia; N.W. Africa; rare in Urals and Denmark, irregular in Switzerland. Rare visitor Britain, Holland, Belgium, Baltic Provinces, Sardinia. Migrates; occurs Egypt on passage. Winters S. Arabia and tropical and S. Africa.

HALCYONES.

Plumage glossy and close lying; primaries 11, 1st small; tail feathers usually 12; tarsus short; feet anisodactyl, 3 toes in front and 1 behind, 3rd and 4th united for greater part of their length, 2nd and 3rd at basal joint only; head large, bill long and straight; nest in tunnels; eggs white, rounded.

ALCEDINIDÆ.

Characters those of the Order.

ALCEDO.

Bill compressed sideways; tail short; plumage brilliant; food, fish and aquatic insects, caught by plunging from a perch on bank of river or lake, or from a hovering position.

Alcedo atthis atthis L. ("Alcedo ispida pallida" of authors.)

♂ ♀ Crown, nape, and wing coverts dull green, barred or spotted blue; back, rump, and upper tail coverts brilliant blue, scapulars greener; lores, ear coverts, and underparts reddish chestnut; throat and spots on neck white. Bill black, reddish at base below. Legs and feet coral red. Wing 71-79 (H.). Young have some blue grey feathers on breast.

Resident.—N. Africa (Morocco to Egypt) and Syria.

A. atthis ispida L. Kingfisher. *Fr.* Martin pêcheur; *Ger.* Gemeiner Eisvogel; *Ital.* Piombina; *Swed.* Kungsfiskare.

♂ ♀ Like "atthis" but bill stouter, underparts generally darker and young have generally more and also bluer grey feathers on breast. Wing 74-79. Tarsus 9-10. Bill 33-40.

Breeds.—British Isles, Europe from S. Scandinavia and about 55° in Russia (rare Denmark and Baltic Provinces) to Mediterranean, Cyprus, Sicily. Chiefly resident. Occurs Corsica and Sardinia in winter. Rare visitor Madeira.

A. atthis pallasi Reichenbach. Smaller. Wing 70-75 (H.). Bill shorter than in "ispida." Doubtfully separable from typical form.

Breeds.—Caucasus, Volga and Ural Rivers and in W. Siberia; probably also Asia Minor.

CERYLE.

Plumage black and white; bill straight, compressed sideways; head crested.

Ceryle rudis rudis (L.).

♂ Above black, variegated with white ; eyebrow white ; tail basal two-thirds white, black spotted, terminal third black with white tips ; beneath white with a broad and a narrow black band across breast. Bill, legs and feet black. ♀ has only lower narrow band across breast. Wing ♂ ♀ 131-136. Tarsus 10-11.5. Bill 50-62 (H.). In young breast band is greyish.

Resident.—Egypt and Asia Minor east to Persian Gulf and south down Nile Valley, and all over Africa south of Sahara. Occasionally occurs Volga River and in Greece.

Ceryle alcyon (L.).

♂ Above grey blue, crest striped black ; beneath white with blue grey band across breast. Wing 160 (H.). ♀ Breast band rusty red and flanks also.

An American species of rare occurrence in Europe ; reported Ireland, Azores, Holland, and doubtful Iceland.

PICI.

Bill straight and strong ; feet strong, 2 toes in front and 2 behind (sometimes 3 toes, 1 behind 2 in front) ; affect forests or open country with old trees ; nest in holes in trees ; eggs white.

PICIDÆ.

Characters those of the Order.

PICUS.

Plumage more or less green ; tail feathers pointed and stiff for support in climbing ; 4 toes ; neck thick.

Picus viridis viridis L. GREEN WOODPECKER. *Fr.* Picvert ; *Ger.* Grünspecht ; *Ital.* Picchio verde ; *Swed.* Grön Hackspett.

♂ Above green, crown and nape grey, most feathers with crimson tips, rump bright greenish yellow ; beneath paler green, cheeks black, rictal stripe crimson bordered with black, under

tail coverts barred grey. Bill dark blue grey, pale below at base. Legs and feet greenish leaden grey. ♀ as ♂ but rictal stripe black. Wing ♂ ♀ 165-172 (H.). Bill 40-45. Young are barred on underparts.

Resident.—Scandinavia to near Arctic Circle, Baltic Provinces, N. and C. Russia east to Volga River, N.E. Germany.

P. viridis virescens (Brehm). ♂ ♀ Wing shorter, 155-165. Tarsus 28-32. Bill 35-40, also shorter.

Resident.—Central Europe, east to Pomerania and Hungary, south to Alps and S. France, north to Holland and Belgium; also England and Wales, rare N. England; very rare Scotland and Ireland.

P. viridis pronus Hartert. Measurements as in "virescens" but bill weaker and thinner.

Resident.—S. Switzerland, Italy.

P. viridis sharpei (Saunders). Like "viridis" but cheeks grey, in front of eye a black patch; crimson malar stripe not bordered with black; under tail coverts not barred. Wing ♂ ♀ 155-158. Bill 35-38.

Resident.—C. and S. Spain, S. Portugal.

In N.W. Spain examples seem intermediate, always having some trace of black round malar stripe.

P. viridis saundersi (Taczanowski). Upper parts greyer than in typical form; bill sometimes entirely dark. Wing 161-168 (H.).

Resident.—Caucasus.

P. viridis doffeini Stresemann. Upper parts greyer-green than in "virescens" and underparts paler; wing as in "virescens."

Resident.—Macedonia, Greece.

P. viridis romanæ Stresemann. Underparts as in "doffeini," upper parts as in "virescens"; wing as in latter.

Resident.—Rumania, Bukowina.

Picus vaillanti (Malherbe).

Differs from "P. viridis" as follows: ♂ Crimson on crown bordered yellow behind, cheeks grey; rictal stripe black in both sexes. In ♀ crown grey, only occiput crimson. Wing 160-170 (H.).

Resident.—Morocco, Algeria, and Tunisia.

Picus canus canus Gmelin. *Fr.* Pic cendré ; *Ger.* Grauspecht ; *Ital.* Picchio cenerino ; *Swed.* Gråspett.

♂ Above green, yellowish on rump, forecrown crimson, occiput (streaked black) and neck grey ; lores and narrow rictal stripe black ; beneath pale green, throat still paler, under tail coverts slightly mottled dark brown. Bill dark horn, pale at base below. Legs and feet greenish grey. Wing ♀ ♂ 143-150. Tarsus 25-27. Culmen 39-44 (H.). ♀ Crown all grey. Young like adult, but flanks barred dark brown and rictal stripe indistinct.

Resident.—Continental Europe from about Arctic Circle east to Urals, south to France, Switzerland, Italian Alps, Albania, Bulgaria and Turkey, in S. Russia to Caucasus and Astrakhan ; also in W. Persia.

DRYOBATES

Plumage black and white (with some red) ; 4 toes ; neck much thinner than in "Picus."

Dryobates major major (L.). GREAT SPOTTED WOOD-PECKER. *Fr.* Pic épeiche ; *Ger.* Grosser Buntspecht ; *Ital.* Picchio rosso maggiore ; *Swed.* Större Hackspett.

♂ Above black, frontal band brown to brownish white ; occiput crimson ; sides of head, ear coverts, a patch on side of neck, scapulars and wing spots white ; beneath creamy white to buff or dirty brown ; a black band from gape to nape, developing into a black patch on either side of chest ; abdomen and under tail coverts crimson ; outer tail feathers barred white. Bill leaden grey, paler at base below. Legs and feet greenish grey. Iris crimson red. Wing ♂ ♀ 136-144. Tarsus 24-26. Bill 23-26. ♀ like ♂ but lacks crimson on occiput. Young have entire crown crimson, and iris brown.

Resident.—Scandinavia to E. Finmark, Lapland, Finland, Russia east to Urals and south to Volga, Baltic Provinces, E. Prussia. Sometimes strays in winter, then occurs in small numbers C. Europe, British Isles, Ural Delta, Caucasus. Rare visitor Faroes.

D. major pinetorum (Brehm). Smaller than "major" and bill more slender ; frontal band grey brown. Wing 131-138 (H.).

Resident—C. Europe from Holland and Germany (except E. Prussia) south to Pyrenees, N. Switzerland, and Hungary.

D. major anglicus (Hartert). Wing still shorter than in "pinetorum" and bill finer; ear coverts and underparts browner than in "major"; occasionally traces of crimson on breast. Wing ♂ ♀ 126-136.

Resident.—England and Scotland.

D. major harterti (Arrigoni). Rather browner on underparts than in "anglicus," frontal band lighter, more reddish buff; crimson of ventral region much more brilliant than in preceding races. Wing 130-138 (H.).

Resident.—Sardinia.

D. major parroti (Hartert). Like "harterti" but bill about 5 m.m. longer and more slender.

Resident.—Corsica.

D. major italiæ Stresemann. Smaller than "pinetorum," underparts browner, red paler; very close to "anglicus." Wing 126-133 (H.).

Resident.—Italy.

D. major præalpinus Burg. Frontal band narrow; underparts deep red brown with whitish tinge; throat deep brown, often with a red brown band between the dark stripes. Wing 130-136 (H.).

Resident.—Switzerland and N. Italy.

D. major candidus Stresemann. Measurements as in "pinetorum" but underparts very pale as in "major."

Resident.—Rumania; possibly also S. Russia to Caucasus.

D. major balcanicus Gengler and Stresemann. Nearest "D. m. syriacus" of Asia Minor in which black of back of head does not join black of sides of neck, but differs from it in having a stronger bill and more pronounced stripes on flanks. Wing 125-135 (H.).

Resident.—Macedonia, Serbia, Bulgaria

D. major hispanus (Schlüter). Very near "anglicus" but white spots on wings, especially outer webs of secondaries, markedly narrower; frontal band reddish buff; crimson of ventral region brighter as in "harterti"; generally traces of crimson on breast. Wing 124-131. Bill 21-24.

Resident.—S. Spain and Portugal.

D. major mauritanus (Brehm). Like "hispanus" but underparts paler and crimson on breast well developed, though occasionally absent. Wing 123-124.

Resident.—N. and Middle Morocco.

D. major numidus (Malherbe). Like "mauritanus" but black side patches meet on breast and the feathers have crimson tips forming a black and crimson breast band.

Resident.—N. Algeria, N. Tunisia.

D. major canariensis (Koenig). Underparts of a dark buff brown, sides of abdomen very white, ear coverts almost pure white, frontal band reddish buff to reddish brown. Wing 132-137 (H.). Bill weaker than in "pinetorum."

Resident.—Tenerife (Canary Islands).

D. major thanneri (Le Roi). Underparts paler than in "canariensis," and also frontal band ; ear coverts are similar.

Resident.—Gran Canaria (Canary Islands).

Dryobates leucotus leucotus (Bechstein). WHITE-BACKED WOODPECKER. *Ger.* Weisspecht ; *Swed.* Hvitriggiga.

♂ Above black ; frontal band creamy white ; entire crown crimson, ear coverts brownish white with black above and below ; lower back and quills barred and spotted white, some white on median wing coverts ; rump white narrowly barred black ; beneath white, flanks black streaked, and ventral region pale crimson ; three outer pairs of tail feathers white, barred black. Bill horn blue. Legs leaden grey. Iris hazel. Wing 140-148. Tarsus 25. Culmen 36-39 (H.). ♀ Size as ♂ ; crimson on crown replaced by black.

Resident.—Scandinavia, Poland, E. Prussia, Bavaria, Bohemia to Alps and Carpathians ; Russia (except south). Occurs occasionally Tyrol and N. Italy ; rare in Denmark ; once recorded Belgium.

D. leucotus uralensis (Malherbe). Spots and bars on quills much larger, rump uniform white.

Resident.—N. and C. Ural Mountains, through Siberia to Corea.

D. leucotus lilfordi (Sharpe and Dresser). Rump with broad black bars ; flanks broader streaked, ear coverts entirely enclosed in black.

Resident.—Balkan Peninsula, from Dalmatia to Macedonia ; also Asia Minor to Transcaucasia. Rare visitor Italy.

Dryobates minor minor (L.). LESSER SPOTTED WOOD-PECKER. *Fr.* Pic épeichette ; *Ger.* Kleiner Buntspecht ; *Ital.* Picchio minore ; *Swed.* Lilla Hackspett.

♂ Above black, barred white ; centre of crown crimson ; forehead and cheeks buffy white ; ear coverts pale brown, sides of neck white ; beneath dull white streaked on flanks and sides of breast ; tail, two central pairs of feathers black, rest white barred black. Bill, legs and feet dark plumbeous. Wing ♂ ♀ 89-96 (H.). Tarsus 13-15. Bill 12-13. ♀ has no crimson on crown.

Resident.—Scandinavia and N. Russia to 67° N., Baltic Provinces, E. Prussia, Poland, C. Russia to Volga and Orenburg.

D. minor hortorum (Brehm). Beneath pale brown, sides more distinctly streaked. Wing shorter than in "minor," 87-93 (H.).

Resident.—France, Switzerland, Germany, and through Austria and Hungary to Rumania and Bulgaria.

D. minor comminutus Hartert. Still smaller than "hortorum," underparts darker brown, streaks on sides and bars on tail feathers narrower. Wing ♂ ♀ 85-89.

Resident.—S. and C. England, Holland. Very rare Scotland and Ireland.

D. minor buturlini Hartert. Is like "hortorum" but streaks on sides and dark bars on tail broader. Wing rather shorter, 82-88 (H.).

Resident.—France (Riviera and C. Pyrenees), Italy, through Balkans to Greece and Turkey.

D. minor ledouci (Malherbe). Similar to "buturlini" but black deeper.

Resident.—N. Algeria and N. Tunisia.

D. minor colchicus (Buturlin). Difficult to separate from "ledouci," but has faint traces of a black ring surrounding ear coverts ; this becomes complete in "D. minor danfordi" from Asia Minor. Wing 84-90 (Buturlin).

Resident.—Caucasus.

D. minor kamtschatkensis (Malherbe). Black barring on back and wings much less developed than in "minor" showing more white ; underparts as a rule white, faintly streaked on sides of breast. Larger. Wing 93-101 (H.).

Resident.—E. Russia between Volga and Ural, north to Petchora ; also across Siberia.

"D. m. transitivus," Loudoun, has been described from Baltic Provinces (south part) as intermediate between "minor" and "kamtschatkensis" but its status is not satisfactory.

Dryobates medius medius (L.). MIDDLE SPOTTED WOODPECKER. *Fr.* Pic mar ; *Ger.* Mittlerer Buntspecht:

♂ Above black, forehead grey brown, crown crimson, scapulars white, apical half wing coverts white, quills with white spots on both webs ; beneath, face, throat, sides of neck and underparts white tinged yellow ; a black patch on sides of neck and breast ; abdomen and under tail coverts rosy, flanks streaked ; outer tail feathers white with black bars or spots. Bill blue grey, paler below at base. Legs and feet blue grey. Iris cinnabar red (brown in young). Wing ♂ ♀ 123-129 (H.). Tarsus 21-23. Bill 18-20. In ♀ red on crown is paler.

Resident.—S.W. Sweden, Denmark, N. and W. Russia south to Bessarabia, Belgium, France (local, chiefly in south and in Vosges), Switzerland, Germany (local), E. Prussia, S. Poland, Austria, Hungary, Rumania.

D. medius splendidior (Parrot). Yellow colour on underparts distinct, and rosy colour on abdomen deeper.

Resident.—S. Hungary to Macedonia, Turkey and Greece. Rare Italy and Sicily.

D. medius caucasicus (Bianchi). Is like "medius" but yellow colour extends over entire abdomen, leaving vent and under tail coverts red.

Resident.—Caucasus and N.W. Persia.

D. medius lilianæ Witherby. Like "medius" but black above more intense, black bars on outer tail coverts broader, axillaries very pale yellow. Wing ♂ 126-129, ♀ 124-127 (W.).

Resident.—N. Spain.

PICOÏDES.

Only 3 toes. Colour black and white; yellow on crown in male.

Picoïdes tridactylus tridactylus (L.). THREE-TOED WOODPECKER. *Ger.* Dreizehenspecht; *Swed.* Tetraiga Hackspetten.

♂ Above black, feathers of crown with white tips, centre of crown bright yellow; line down back from nape to rump pure white; upper tail coverts black with a few white spots; sides of head and nape black; a white line behind and beneath the eye; underparts white streaked on sides of breast and barred on flanks and under tail coverts with black. Bill above blue grey with black tip, below pale horn. Legs and feet dark grey. Iris whitish (brown in young). Wing ♂ ♀ 120-129 (H.). Tarsus 23. Bill 20-24. ♀ lacks yellow on crown.

Breeds.—Scandinavia, Finland, Baltic Provinces, N. Russia, chiefly north of 64°; and across S. Siberia. Largely resident. In Volga district, Poland and Germany occasional in winter.

P. tridactylus crissoleucus (Reichenbach). Whiter generally; white line on back broader and spots on upper tail coverts larger.

Breeds.—From Urals across W. Siberia. Occurs Russia to Moscow in winter.

P. tridactylus alpinus Brehm. Bill more slender; back white barred with black; entire abdomen and sides of breast with heavier black streaks and bars.

Resident.—Alpine districts Savoy, Switzerland, Bavaria, Austria, Italy and Carpathians to Rumania, Bosnia and Herzegovina.

DRYOCOPUS.

Neck narrow and thinly feathered; 4 toed; outer fore and hind toes about equal in length.

Dryocopus martius martius (L.). BLACK WOODPECKER. *Fr.* Pic noir; *Ital.* Picchio nero; *Ger.* Schwarzspecht.

♂ Slaty black above, somewhat glossy on head, sides of neck, and wings; crown red-crimson narrowing to a crest on

the nape; beneath brownish. Bill yellowish white, bluish at base and below. Legs and feet dark grey. ♀ duller than ♂ and only nape crimson. Wing ♂ ♀ 235-258. Tarsus 35. Culmen 58-66 (H.).

Resident.—N. and C. Europe from Arctic Circle south to Pyrenees and Mountains of N. Spain, Italy, Bulgaria and Greece; all Russia east to Ufa and Volga River, south to Caucasus; also across N. Asia and in Asia Minor. Rare in Denmark, Holland, Belgium.

JYNX.

Bill and tongue much as in Woodpeckers, but tail soft and not used as a support in climbing; nest in holes in decayed trees; eggs white.

Jynx torquilla torquilla (L.). WRYNECK. *Fr.* Torcol; *Ger.* Wendehals; *Swed.* Göktika.

♂ ♀ Above grey brown, vermiculated, striped and spotted with deep brown and rufous; beneath, throat and chest yellowish buff barred brown, abdomen white with dark brown arrow-shaped spots; quills barred rufous. Bill dull brown. Legs and feet yellowish brown. Wing 85-92. Tarsus 19-21. Bill 12-13.

Breeds.—British Isles; Continental Europe to about 64° in Scandinavia and Russia, south to Spain, N. Italy, Balkan Peninsula and Caucasus; also Asia Minor and W. Siberia. Migrates; occurs on passage Greece, Egypt, and N.W. Africa. Winters tropical Africa and India, but a few in Mediterranean region.

J. torquilla tschusii Kleinschmidt. Darker and smaller than "torquilla." Wing 82-85. Tarsus 18.

Breeds.—Italy, Dalmatia, Sardinia, Corsica, also S.E. France (Arles). Apparently resident.

J. torquilla mauretanica Rothschild. Still darker and smaller. Wing 76-82.5 (H.), with but little rufous and abdomen less white and more coarsely spotted.

Resident.—N. Algeria.

CUCULI.

Contains "Cuculidæ" and "Musophagidæ" (the latter Ethiopian).

CUCULIDÆ.

Outer toe reversible; primaries 10; tail usually 10 feathers.

CUCULUS.

No crest; nostrils round; in flight resemble Sparrow Hawk; insectivorous; eggs placed in nests of other birds.

Cuculus canorus canorus L. CUCKOO. *Fr.* Coucou; *Ger.* Kuckuck; *Ital.* Cuculo; *Swed.* Gök.

♂ adult. Upper parts, throat, and chest grey, abdomen white with dark bars. Bill dark horn, cutting edges and base below yellow. Legs and feet yellow. Iris yellow. Wing ♂ 213-230, ♀ 200-220. Tarsus 20-22. Bill 16-18. ♀ as in ♂ but has also a hepatic phase, chestnut above, yellowish white beneath with black bars. Young: above brown barred rufous and with white tips to feathers; white patch on nape; beneath white or buff barred black.

Breeds.—British Isles; Continental Europe from far north, south to Pyrenees, Sicily, Sardinia; Asia Minor, Caucasus, Urals, and W. Asia. Migrates; occurs Canaries, Madeira, N.W. Africa, and Egypt on passage; winters in S. Arabia and C. and S. Africa.

"*C. c. kleinschmidtii*" Schiebel has been described from Corsica as being darker grey above, but does not appear separable.

C. canorus bangsi Oberholser ("C. minor" of authors). Smaller than "canorus." Wing ♂ ♀ 190-217. Bill also smaller.

Breeds.—Spain, N.W. Africa (Morocco to Tunis). Occurs irregularly Canaries on passage. Its range to east is still uncertain.

CLAMATOR.

Head crested; nostrils slit-like.

Clamator glandarius (L.). GREAT SPOTTED CUCKOO.

♂ ♀ adult. Above grey brown with broad white tips to feathers, ashy on head; beneath white, tinged yellowish on throat; tail long, graduated, white tipped. Bill dark brown, yellowish at base below. Legs and feet blue grey. Wing 195-218 (H.). Tarsus 32-34. Bill 20-23. Young: crown and nape black, remainder upper parts dark brown, glossed green, primaries chestnut.

Breeds.—Spain, Portugal, N. Africa (Morocco to Egypt), and farther south in Africa; also Asia Minor and Palestine. Occurs occasionally Greece and Italy; rare visitor elsewhere in Europe, four times in British Isles. Winters tropical and S. Africa. Eggs placed in nests of "Corvidæ."

Coccyzus.

No crest; nostrils narrow; bill narrower than in "Cuculus" or "Clamator."

Coccyzus americanus americanus (L.). YELLOW-BILLED CUCKOO.

♂ ♀ Above brown, reddish on primaries; beneath white; bare skin round eye grey (in young yellow). Bill above dark horn, with yellow cutting edge towards base, below yellow with black tip. Legs and feet dark grey. Wing ♂ 138-156, ♀ 137-150. Tarsus 22-27. Bill from skull 28-30 (W.).

An American species which has occurred on several occasions in Britain and W. Europe.

Coccyzus erythrophthalmus (Wilson). BLACK-BILLED CUCKOO.

♂ ♀ Above brown; beneath white tinged buff; skin round eye red (yellow in young). Bill above blue grey, darker at tip, below black. Legs and feet bluish grey. Wing ♂ 135-143, ♀ 137-150. Tarsus 23-25. Bill from skull 26-29 (W.).

Another American species of very rare occurrence in Europe. Has occurred Ireland, Italy, Azores.

CENTROPUS.

An African and Indian genus of Cuckoos which hatch their own eggs; bill strong, nostrils slit-like; claw of hind toe almost straight as in Larks. Sexes alike.

Centropus senegalensis ægyptius (Gmelin).

♂ ♀ Crown, nape and hind neck black with dark green or blue gloss; back, scapulars and wing coverts dull brown, quills chestnut with brown tips; beneath straw colour, lighter on flanks, darker on under tail coverts. Bill black. Legs and feet brownish grey. Iris red. Wing 180-185 (H.).

Resident.—Lower Egypt.

The typical race "C. s. senegalensis" inhabits tropical Africa, Nubia to Senegal.

STRIGES.

Birds of prey, mostly nocturnal; facial feathering in the form of a disc surrounded by a ruff with or without ear tufts; feed on small mammals, birds, insects, fish, etc.; eggs white, rounded.

STRIGIDÆ.

Characters as in Order "Striges."

NYCTEA.

Large size; uniform white or barred with dark brown; no ear tufts; tarsi and toes feathered; frequent open country; diurnal as well as nocturnal; nest on ground or on a rock.

Nyctea nyctea (L.). SNOWY OWL. *Ger.* Schneeeule; *Swed.* Harfang.

♂ Pure white, rarely without a few brown spots. Iris yellow. Bill and claws blackish horn. Wing 400-425. Tarsus 50-55. Bill 20-23. ♀ barred with brown, larger than ♂. Wing 435-452. Young like ♀ but barring broader.

Range.—Circumpolar; breeds open country and tundras of N. Europe, Norway to Urals (also N. Siberia and America),

Jan Mayen, Nova Zembla, Spitzbergen, Waigatz. Wanders south in winter to British Isles, France and Switzerland in W. Europe, and S. Russia to Black and Caspian Seas in east; in Asia south to Japan and in America to north United States.

BUBO.

Large size; long ear tufts; tarsus and sometimes toes feathered; chiefly nocturnal; generally nest on rocks, sometimes in ruins or on ground, occasionally in hollow trees or old nests.

Bubo bubo bubo (L.). EAGLE OWL. *Fr.* Grand duc; *Ger.* Uhu; *Ital.* Gufo reale; *Swed.* Bergaf.

♂ ♀ Above pale rufous, thickly marked and freckled with black; feathers on hind neck rufous with broad black central streaks; beneath, breast rufous with broad black central streaks, abdomen with close wavy bars and narrow black central streaks, centre of throat downy white; toes (except last joints) feathered. Iris orange. Bill and claws black. Wing ♂ 430-465, ♀ 465-490 (H.). Tarsus about 60. Bill about 20.

Resident.—Continental Europe from about Arctic Circle south to Pyrenees, Italy and Greece. Irregular in Denmark; occasional visitor Britain.

B. bubo hispanus Rothschild and Hartert. Rufous colour much paler than in typical form. Wing 440-470 (H.).

Resident.—Spain. Has occurred once in Algeria.

B. bubo ruthenus Buturlin and Zhitkow. Intermediate between typical form and the very pale "*B. bubo sibiricus*"; rufous paler as in "*hispanus*" but black streaks darker and underparts whiter.

Resident.—S.E. Russia north to Central and Volga districts and Orenburg; Caucasus and Asia Minor.

B. bubo sibiricus (Schlegel and Susemihl). A pale race in which rufous is mostly replaced by white, the long streaks on breast are narrower and feathering of tarsus and feet is very dense. Wing 450-515 (H.).

Resident.—N. Ural Mountains and W. Siberia; occurs in winter south to Orenburg and N. Caspian district.

B. bubo ascalaphus Savigny. A bright rufous race with no barring on sides of head and neck and few dark longitudinal streaks on breast; abdomen is not streaked but white barred with red brown, never black as in "bubo." Wing ♂ 345-375, ♀ 380-430 (H.).

Resident.—N. Africa (Morocco to Egypt); also Palestine and Syria.

B. bubo desertorum Erlanger. A paler and generally more southern race than "ascalaphus."

Resident.—N.W. Africa south of Atlas Mountains to Egypt.

OTUS.

Of small size; wing under 200 m.m.; ear tufts distinct; partly diurnal; nest generally in holes in trees.

Otus scops scops (L.). SCOPS OWL. *Fr.* Petit duc; *Ger.* Zwergohreule; *Ital.* Assiolo.

♂ ♀ Grey brown, finely vermiculated with dark brown mixed with rufous and with dark brown shaft streaks; primaries barred white on outer web; outer webs of some scapulars rufous; facial disc grey, freckled and with a posterior dark brown frill; feathers of abdomen white finely freckled and with dark brown shaft streaks; 1st primary between 5th and 6th, sometimes between 4th and 5th, 2nd and 3rd generally longest. Bill bluish black. Tarsi feathered. Feet grey, claws pale horn. Iris yellow. Wing 145-162. Tarsus 25-30. Bill 10.

Breeds.—From E. Canaries through N.W. Africa; S. Europe north to S. France, Switzerland, Italy, S. Austria, S. Hungary, Rumania, S. Russia (especially in S.E.), Central Russia (local), but occasionally north to Petrograd; Asia Minor and Palestine. Migrates; occurs Malta and Egypt on passage, especially spring. Winters tropical Africa. Rare visitor to C. Europe and Britain.

O. scops pulchellus (Pallas). Generally greyer in colour with many white spots on upper parts. Wing longer, 151-164.

Breeds.—E. Russia (Orenburg and Ural), and S.W. Siberia. Occurs in N.E. Africa in winter.

O. scops powelli Meinertzhagen. Intermediate between "O. s. scops" and "O. s. cyprius" (a resident race in Cyprus); reddish brown of former lacking above but a lighter grey than the latter. Wing 147-160.

Breeds.—Crete.

ASIO.

Of medium size; ear tufts present, but vary in size; ear openings very large and asymmetrical; wings reach beyond tail; tarsi feathered.

Asio otus otus (L.). LONG-EARED OWL. *Fr.* Hibou vulgaire; *Ger.* Waldohreule; *Ital.* Gufo comune; *Swed.* Hornuggla.

♂ ♀ Above, feathers freckled brown and white, centres dark brown and bases pale rufous; some wing coverts with large white spots on outer webs; quills rufous above, greyish white beneath and barred with brown, at bases creamy white unbarred; ear tufts about 35 m.m. long, dark brown, rufous on outer, white on inner margins; facial disc brownish buff; beneath white mixed with rufous and with red brown central streaks, under wing coverts white or pale rufous with broad brown tips forming a large dark patch; tail beneath with 6 to 7 narrow bars. Bill dark horn. Toes thinly feathered, claws dark horn. Iris yellow. Wing 282-300. Tarsus 35-43. Bill 22-24.

Resident.—British Isles; Continental Europe to near Arctic Circle from Norway to Russia, in Urals to 57°-59°, Caucasus; east across Siberia to Pacific; W. Asia to Palestine; N. Tunisia, N. Algeria (very rare), N. Morocco and Azores. Rare visitor to Egypt, Corsica, Sardinia, Malta.

A. otus canariensis Madarasz. Darker, less rufous, also smaller. Wing 263-275 (H.).

Resident.—Gran Canaria, Tenerife, Palma (W. Canary Islands).

Asio flammeus flammeus Pontoppidan. SHORT-EARED OWL. *Fr.* Chouette de marais; *Ger.* Sumpfhohreule; *Ital.* Gufo di padule; *Swed.* Gorduggla.

♂ ♀ Above brown with broad rufous margins but no bars; ear tufts very short; quills rufous with dark brown bars; beneath white or reddish buff streaked black (broadly on chest);

disc white encircled by a frill of rufous and black feathers ; quills beneath creamy on basal portion ; apical portions of lower series of under wing coverts dark brown forming a large wing patch ; tail beneath with only 2 to 3 bars, 5-12 m.m. broad. Bill blackish. Toes thickly feathered, claws blackish. Iris bright yellow. Wing ♂ 300-330, ♀ 290-320. Tarsus 35-44. Bill 14-16.

Breeds.—England and Scotland ; Continental Europe north to about Arctic Circle, south to Pyrenees, Italy, Austria, Hungary, Rumania, Bulgaria, S. Russia ; also across Siberia. Migrates ; occurs Faroes on passage ; winters in British Isles and sometimes C. Europe, but chiefly Mediterranean countries and N. Africa. Rare visitor to Iceland, Madeira, Azores, Canaries.

A. flammeus leucopsis (Brehm). A paler race, in which rufous is in many specimens replaced by white to a large extent.

A Siberian race, whose range extends to Orenburg, E. Russia.

Asio capensis tingitanus (Loche).

♂ ♀ Dull brown, not streaked but vermiculated with rufous ; wings and tail barred with rufous ; disc brownish grey with a broad black ring round eye ; abdomen barred with white ; tarsi feathered pale buff ; toes scantily feathered ; ear tufts very short. Bill and feet blackish. Iris dark brown with orange inner ring. Wing 280-300 (H.).

Breeds.—N. and C. Morocco, N. Algeria. Apparently resident. Of occasional occurrence S. Spain in autumn.

The typical race "*A. c. capensis*" is S. African.

CRYPTOGLAUX.

Size medium ; no ear tufts ; feet feathered ; nocturnal but also diurnal in far north ; nest in holes in trees.

Cryptoglaux funerea funerea (L.). TENGMAŁM'S OWL.
Ger. Rauhfußkauz ; *Swed.* Perluggla.

♂ ♀ Above umber brown barred with white, spotted on crown ; quills and tail feathers with rows of white spots on each web ; disc dull white partly surrounded by white and brown feathers ; a black patch in front of the eye ; beneath white mottled with reddish brown, mottling very faint on abdomen ;

tarsi and toes feathered. Bill pale yellow. Claws black. Iris bright yellow. Wing ♂ 160-170, ♀ 165-180. Tarsus 20-23. Bill from base 18-21 (W.).

Breeds.—N. and C. Europe from forest limit south to Pyrenees and Alps, N. Balkans, C. Russia, east to Volga and Urals; and in Siberia. Chiefly resident. In winter occurs in plains of C. Europe and S. Russia. Rare visitor Britain.

C. funerea caucasica (Buturlin). Smaller. Wing 157. Bill from nostrils 11.5 (H.).

Resident.—N. Caucasus.

CARINE.

Small; wing under 170 m.m.; no ear tufts; spotted on upper and streaked on underparts; feed on small birds, insects, mice, reptiles, etc.; nest in holes in masonry, rocks, or trees, occasionally on ground.

Carine noctua noctua (Scopoli). LITTLE OWL. *Ger.* Steinkauz; *Fr.* Chouette; *Ital.* Civetta.

♂ ♀ Above dark brown with large white spots, smaller and narrower on crown; quills barred white; tail barred buff; beneath white broadly streaked with dark brown; tarsus feathered white; toes covered with hairs; 3rd and 4th primaries equal and longest. Bill yellow, greenish at base. Feet greyish yellow. Iris yellow. Wing 152-170. Tarsus 30-35. Bill 10-12.

Resident.—Continental Europe from Denmark to Baltic Provinces south to Pyrenees, N. Italy, Balearic Islands, Corsica, Sardinia, Sicily, Bosnia, Serbia, and C. Russia to about 55° N.

"*C. noctua sarda*" (Kleinschmidt), narrower banding on scapulars, has been described from Sardinia but does not seem separable.

C. noctua mira (Witherby). Upper parts darker and less rufous brown than in "*noctua*" and brown streaks on underparts darker. Wing ♂ 153-165, ♀ 156-165 (W.).

Resident.—Holland and Flanders, British Isles (introduced).

C. noctua indigena (Brehm). Brown of upper and stripes of underparts paler and redder than in "*noctua*"; buff markings on

central tail feathers almost obsolete or reduced to a few spots ; some ♂ specimens have crown streaked rather than spotted.

Resident.—Balkan Peninsula ; Greek Islands ; S. Russia to Poltava, Orenburg and Volga Delta.

C. noctua vidalii (A. E. Brehm). Smaller and darker than "noctua," spots more copious, whiter and more defined ; head streaked rather than spotted.

Resident.—S. Spain (possibly all Iberian Peninsula).

C. noctua glaux (Savigny). Brown of upper parts and streaks beneath paler than in "noctua," more reddish to chocolate brown.

Resident.—Egypt and N.W. Africa (Morocco to Tunis, north of Atlas).

C. noctua saharæ (Kleinschmidt). A still paler desert form, brown tending to cinnamon colour.

Resident.—S. Tunis and S. Algeria south of Atlas ; Sollum (W. Egypt).

C. noctua caucasica Sarudny and Loudoun. Intermediate between "C. n. glaux" and "bactriana" of S.W. Asia ; paler than "glaux" and toes are feathered in winter. Wing 161-166 (H.).

Resident.—W. and S. Caspian districts, Caucasus.

GLAUCIDIUM.

Small ; wing less than 110 m.m. ; 1st primary very short ; no ear tufts ; not strictly nocturnal ; feed on lemmings, mice, small birds, and insects.

Glaucidium passerinum passerinum (L.). PIGMY OWL. *Fr.* Chevêchette ; *Ger.* Sperlingskauz ; *Ital.* Civetta minore ; *Swed.* Sparfuggla.

♂ ♀ Above brown, with small dull buff spots ; tail barred white ; beneath white with brown striations. Bill yellow. Tarsi and toes feathered, claws dark brown. Iris yellow. Wing 98-107. Tarsus 16-18. Culmen 15-16 (H.).

Resident.—Continental Europe from 65° in Norway, 68° in Finland and N. Russia south to Mountains of Germany, E. France, Switzerland, N. Italy and Carpathians, and in Russia to Kaluga and Kazan Govts. ; also in Caucasus and W. Siberia. Rare Denmark, Belgium and France to Pyrenees.

SURNIA.

Of Hawk-like habits; mostly diurnal; tail long and graduated; tarsus and toes feathered; no ear tufts; nest in holes in trees.

Surnia ulula ulula (L.). HAWK OWL. *Ger.* Sperbereule; *Swed.* Hökuggla.

♂ ♀ Above umber (blackish on hind neck), spotted on crown, and irregularly barred on upper parts with white; scapulars very white; quills with white spots on margins of both webs; tail with 7 or 8 white bars; beneath white barred with dark brown; disc dull white, chin dark brown; a black band behind ear coverts extending down sides of neck; legs and toes thickly feathered. Bill light yellow. Soles yellow. Iris bright yellow. Wing 231-243 (H.). Tarsus 20-30. Bill 14-15.

Resident.—Norway, N. Sweden, Lapland, Finland, and Russia from about 55° to 68° N. In winter moves south as far as S. Urals and E. Germany; occasionally to Austria and Hungary; rare in W. Europe, has occurred several times in Britain.

S. ulula pallasii Buturlin. Brown colour paler throughout. A Siberian race; occurs at Orenburg in winter.

S. ulula caparoch (Müller). Bars on underparts broader and often very rufous, crown feathers with much less white.

An American form; has occurred four times in Britain.

STRIX.

Legs and toes feathered; no ear tufts; ear openings large and asymmetrical (right larger than left), and with a large operculum.

Strix nebulosa lapponica Thunberg. LAPLAND OWL. *Swed.* Lappuggla.

♂ ♀ Above white, mottled and freckled with brown (which predominates), scapulars whiter; facial disc prominent, grey barred brown, eye partly surrounded by black; beneath white broadly streaked with brown, middle of chin and throat black.

Bill horn yellow. Iris light yellow. Wing 440-462. Tarsus about 60. Culmen 38-42. Tail 310-330 (H.).

Resident.—N. Norway, Lapland south to about 67°, N. Russia south to about 52°, also W. Siberia. Moves south in small numbers in winter as far as Orenburg and E. Prussia.

The typical form "*S. n. nebulosa*" is American.

***Strix uralensis uralensis* Pallas. URAL OWL.**

♂ ♀ General colour white broadly striated with dark brown; disc grey, ruff mottled brown and white. Bill deep yellowish. Iris dark brown. Wing ♂ ♀ 350-395. Tail 280-320 (H.).

Resident.—Scandinavia (rare in Lapland and Finland), N. Russia south to Volga, Simbirsk, Kazan and Urals (also W. Siberia), Baltic Provinces, E. Prussia, south to Carpathians, Transylvania, and Mountains of Bosnia and Albania. In winter occurs Orenburg; rare Germany and N. Italy. A melanistic form, very dark brown throughout with black streaks, occurs in E. Alps, Carinthia and Bosnia.

***Strix aluco aluco* L. TAWNY OWL. *Fr.* Chat-huant; *Ger.* Waldkauz; *Ital.* Allocco; *Swed.* Kattuggla.**

♂ ♀ "Grey form." Above white, mottled, freckled, and streaked with dark brown; outer webs of scapulars and some wing coverts white tinged with rufous; beneath white, striated and barred with brown; facial disc grey, ruff mottled brown and white. Bill pale horn, tip yellow. Iris dark brown. Wing ♂ 252-290, ♀ 263-305. Tarsus 42-45. Bill 16-17. A rufous form also occurs, most often in northern countries; in many the colour is almost chestnut. There is also a melanistic form, as in "*uralensis*"; this has occurred in Hungary, Turkey, and Caucasus; it has been described as "*S. wilkowskii*."

Resident.—British Isles; Continental Europe (except Lapland and Finland) from 65° in Scandinavia and 61° in N. Russia south to Mediterranean and Caucasus, east to W. Siberia; also Asia Minor and Palestine. In winter occurs Morocco; rare Egypt.

***S. aluco mauritanica* (Witherby).** Resembles grey form of "*aluco*" but darker above and banding more prominent and broader. Wing 273-296 (H.).

Resident.—N. Morocco, N. Algeria, N. Tunisia.

FLAMMEA.

Yellow, grey and white Owls; no ear tufts; nocturnal, partial to old buildings; nest in buildings, hollow trees or cliffs.

Flammea alba alba (Scopoli). BARN OWL. *Fr.* Effraye; *Ger.* Schleiereule; *Ital.* Barbagianni; *Swed.* Tornuggla.

♂ ♀ Above rufous yellow, vermiculated grey and spotted with dark grey and white; disc white, a chestnut spot in front of eye, frill white or ochreous; beneath white with or without a few black spots and sometimes with rufous tinge on breast. Bill ivory white. Tarsus covered with short feathers, toes with bristles. Iris black. Wing 260-303. Tarsus 50-58. Bill 22-25.

Resident.—W. Europe from British Isles through W. France to Portugal and Spain; Italy, Albania, to Cyprus and Mesopotamia; also N. Africa (Morocco to Egypt); W. Canary Islands.

F. alba guttata (Brehm). Above, feathers dark grey almost to base (therefore little rufous yellow shows), with small black drop-like marks and white tips; disc vinous to white, a black spot in front of eye, ruff brownish rufous with black tips, sides of head and neck and underparts rufous, last spotted throughout with small black spots; occasional birds are indistinguishable from "alba."

Resident.—S. Sweden, Denmark, Baltic Provinces, and C. Europe south of Baltic to Alps, Austria, Hungary, and S.W. Russia north to Tula Govt. Occurs in Rumania in winter; occasional in Britain.

Birds from E. France are intermediate between "alba" and "guttata."

F. alba ernesti (Kleinschmidt). Above bright yellowish rufous; beneath satin white with a very few spots on abdomen.

Resident.—Sardinia and Corsica.

F. alba schmitzi (Hartert). Grey above as in "guttata" but paler and bases of feathers rufous; beneath white tinged rufous with larger spots; a very distinct red brown spot in front of eye.

Resident.—Madeira.

F. alba gracilirostris (Hartert). Bill and legs much more slender; spots smaller than in "schmitzi." Wing 255-265 (H.).

Resident.—E. Canaries (Fuerteventura and Lanzarote).

ACCIPITRES.

Diurnal birds of prey; bill hooked, sharp pointed; claws strong; eggs spotted red, sometimes without spots.

FALCONIDÆ.

Characters as in genus. Nostrils small and rounded or slit-like.

FALCO.

Sharp tooth on upper mandible and corresponding notch in lower mandible; nostrils round, with tubercle in middle; of powerful flight and very bold, capturing prey on wing; nest on trees, rocks, or ground, nests either self-made or appropriated; eggs variable but usually blotched and marked with deep orange rufous or reddish brown on a dull white, reddish white, or buff ground. ♀ larger than ♂.

Falco peregrinus peregrinus Tunstall. PEREGRINE FALCON. *Fr.* Faucon pèlerin; *Ger.* Wanderfalke; *Ital.* Falcone; *Swed.* Pilgrimsfalk.

♂ Above blue slate with obscure dark bars, sooty black on nape, sides of head, and rictal stripe (which is broad and short); a narrow tongue of white separates rictal stripe from black of sides of head; beneath buffy white tinged more or less reddish, chest uniform or with long drop-like streaks, rest of underparts barred or spotted dark brown. Bill slate blue with black tip. Cere yellow. Tarsus half feathered. Legs and feet yellow, claws black. Iris hazel. Wing ♂ 300-330, ♀ 350-380. Tarsus ♂ 40-45, ♀ 49-54. Bill ♂ 19-20, ♀ 23-26. ♀ Larger, darker above, and more banded below. Young: head and neck browner, crown and nape marked with dull and rufous white; upper parts

dark brown with paler margins ; beneath reddish buff with long brown streaks ; cere, legs and feet bluish.

Breeds.—British Isles ; Continental Europe from Arctic Islands (Nova Zembla, Jan Mayen, Waigatz) south to Pyrenees, N. Spain, N. Italy, Balkans, and east to Urals. Chiefly resident, but many wander in winter, then occurring Sardinia, Spain, Tunisia, Egypt. Rare visitor Canaries and Faroes.

F. peregrinus calidus Latham. Rictal stripe narrow and tongue of white behind it broader and reaches nearer to eye ; head and bill appear smaller.

An Asiatic race which breeds in N.E. Russia, Petchora and Samara districts ; occasional in winter west to Germany, Albania and Italy ; more abundant S.E. Europe and Egypt.

F. peregrinus brookei Sharpe. Smaller. Wing ♂ 280-300, ♀ 320-340 (H.). In some a more or less rufous collar on hind neck ; underparts more rufous and more heavily barred.

Breeds.—S. Spain, Morocco (Tangier), Balearic Islands, Liguria, Corsica, Sardinia, Sicily, Malta, Greece, Caucasus and Asia Minor to Palestine. Resident.

F. peregrinus pelegrinoides Temminck. Barbary Falcon. ♂ much smaller than ♂ "peregrinus" and with dark bars generally more distinct ; more rufous on crown and hind neck and underparts redder ; breast and even abdomen without drop-like markings or only narrow shaft streaks. Wing 273-293. ♀ darker above and more spotted below. Wing 315-332 (H.).

Breeds.—N. Africa, Morocco to Egypt, Sahara, Canary Islands ; occurs Soudan and Blue Nile in winter.

F. peregrinus anatum Bonaparte. ♂ ♀ Rictal stripe broader than in "peregrinus" and often joined to ear coverts ; underparts lightly marked and often powdered grey ; difficult to distinguish from adult "peregrinus." Young are much darker, both above and below than young "peregrinus."

A N. American race ; has twice occurred in England.

Falco biarmicus tanypterus Schlegel. LANNER FALCON.

♂ Crown and hind neck dark vinous buff with narrow streaks ; an indistinct dark stripe over and behind eye ; slight rictal stripe black ; above grey or grey brown with paler or

rufous bars ; primaries with complete reddish white bars on inner webs ; beneath buff, chest with dark shaft stripes, rest of underparts with large black spots ; tail barred and tipped reddish buff. Cere, naked patch round eye, legs and feet yellow. Bill bluish with yellow base and black tip. Iris dark brown. Wing ♂ 314-325, ♀ 355-373 (H.). ♀ generally darker above. Young : above dark grey brown with or without rufous margins, generally browner on crown and nape ; tail with reddish buff bars or spots on inner or both webs of all feathers except central pair ; beneath buff streaked with long hastate brown marks, or brown with buff margins ; some have much chestnut on under wing coverts and axillaries.

Resident.—Egypt and Nubia to Persian Gulf.

F. biarmicus erlangeri. Smaller and not so dark above. Wing ♂ 308-324, ♀ 330-359 (H.). Tarsus 45-52. Bill 18-19.

Resident.—Morocco, Algeria, Tunisia, specially south slopes of Atlas and deserts to south ; local and rare in S. Spain.

F. biarmicus feldeggii Schlegel.

♂ Crown and nape vinous buff broadly streaked and therefore much darker than in "erlangeri" ; above dark brown barred greyish buff ; rectal stripe narrow ; beneath white generally tinged buff, chin pure white, breast and centre of abdomen with dark brown heart-shaped drops, flanks and thighs barred dark brown ; black bars on quills reaching to inner margin ; darker generally and more uniformly streaked than "tanypterus." Wing ♂ 308-327, ♀ 345-357, one 373 (H.). Young : above dark brown, spotted buff on centre of each web ; central tail feathers unbarred ; underparts broadly striated.

Breeds.—S. and C. Italy, rare in north, Herzegovina, Albania and Greece to Bulgaria. Chiefly resident.

The typical race "F. b. biarmicus" is S. African. All Lanners have 1st primary abruptly emarginated on inner web before the tip and the 2nd narrowed at tip ; this is sometimes indistinct in young.

Falco cherrug cherrug Gray. SAKER FALCON.

♂ Above brown with reddish buff margins, crown and nape white, generally with rufous buff tinge and streaked dark brown ; quills white on inner web, with irregular and incomplete dark bars

not reaching inner margin; tail with white or rufous spots on both webs; beneath white sparsely spotted on breast and more boldly on abdomen and flanks. ♀ more boldly spotted on underparts. Wing ♂ 350-372, ♀ 390-420. Tarsus 50-55. Bill from cere, ♂ 20-22, ♀ 24-25.5 (H.). Young closely resemble ♀.

Breeds.—European plains from Danube near Vienna, east through Bulgaria, Rumania, S. Russia, to Turkestan, S.W. Siberia and S.W. Asia; in Russia north to about 55°. Partly migratory; occurs in winter in Egypt, Abyssinia, and India; also S. Italy and occasionally farther west in Europe.

Falco rusticolus rusticolus L. JER-FALCON. *Ger.* Gerfalke; *Swed.* Jagtfalk.

♂ ♀ Above slaty brown with pale grey bars, bluish slate on rump, upper tail coverts and tail, which also are barred grey; hind neck generally with much white; beneath white with dark drop-like streaks; tail and flanks barred slaty brown; 4th primary shorter than 1st. Bill bluish horn, yellowish at base. Cere, legs and feet yellow. ♂ Wing 350-372. Tarsus 50-61. Bill from cere 23-24. ♀ Wing 385-402. Bill from cere 25-27 (W.). Young: above brown with buff margins, not barred; tail barred dull buff; beneath white boldly streaked dark brown; cere, legs and feet grey.

Resident.—Norway, Sweden, Lapland, N. Russia. Occasional in winter to south as far as Belgium and Germany; very rare in Britain or farther south in Europe.

F. rusticolus candicans Gmelin. Greenland Falcon.

Very variable irrespective of age; one form much the same as typical "rusticolus" but larger. There is also a white form: above white with irregular long heavy dark drop-like spots; quills pure white on inner web, irregularly barred on outer; tail pure white; beneath white with a few long black marks. Wing ♂ 370-400, ♀ 400-435. Tarsus ♂ 58-60, ♀ 65-70. Bill ♂ 20-23, ♀ 26-27.

Resident.—Greenland, Arctic America to Alaska, and N. Siberia. Casual in W. Europe. Recorded Iceland, Faroes, British Isles, Scandinavia, Belgium, W. Germany, France.

F. rusticolus islandus Brünnich. Iceland Falcon. Very similar to "rusticolus" but crown and nape whiter and bars

above paler grey ; beneath, spots and streaks finer ; indistinguishable from dark Greenland birds, but no white form. Wing ♂ 366-380, ♀ 410-430. Tarsus 57-69. Bill from cere, ♂ 23-27, ♀ 26-29 (W.).

Resident.—Iceland ; wanders occasionally south to N.W. Europe. Recorded Faroes, British Isles, France, Switzerland, Holland, Austria.

Falco eleonoræ Gené. ELEONORA'S FALCON.

Has two phases, dark and light.

♂ ♀ Dark form : dark slate colour, tinged brown, both above and below. Light form : resembles a Hobby ; above slate colour ; beneath reddish buff striated dark brown, becoming darker and more cinnamon on thighs, vent, and under tail coverts ; throat sometimes white. Bill greyish blue horn, black at tip. Legs and feet sulphur-yellow. Iris deep brown. Wing ♂ 310-323, ♀ 326-338. Tarsus 36. Bill 16. Young : upper parts dull black with broad rufous margins ; beneath rufous buff, striated, but thighs, etc., not darker.

Breeds.—Cliffs of Greece and Cyclades, Cyprus, Sicily, Sardinia, Corsica, Balearic Islands, S. Spain, Canaries (Fuerteventura and Lanzarote), Morocco (W. Coast). Partially migratory ; occurs in winter south as far as Madagascar. Is a late breeder ; fresh eggs found in late July or early in August.

Falco concolor Temminck.

♂ ♀ Grey throughout, except chin which is buff. Cere and legs yellow. Wing ♀ 280.

An African species, resident in small numbers in Lower and Upper Egypt.

Falco subbuteo subbuteo L. HOBBY. *Fr.* Hobereau ; *Ger.* Lerchenfalke ; *Ital.* Lodolaia ; *Swed.* Lärkfalk.

♂ ♀ Above slate grey, darker on head, some white and rufous on hind neck ; tail rounded, central pair feathers longest and uniform, others barred rufous ; rictal stripe black ; beneath white, sometimes reddish buff, broadly striated black, uniform chestnut on abdomen, thighs, vent, and under tail coverts ; 2nd primary longest, 1st between 2nd and 3rd. Bill bluish horn, tip black. Legs, feet, and cere yellow. Iris dark brown. Wing

♂ 252-266, ♀ 261-275. Tarsus 34-38. Bill 14-15. Young : above, feathers with narrow dull rufous or reddish grey margins ; beneath as in adult, but abdomen, etc., buff not chestnut.

Breeds.—England and Scotland ; Continental Europe from about 65° N. south to Mediterranean and Islands (chiefly on passage in Mediterranean basin but some winter as well as breed) ; Madeira, Caucasus, Urals to C. Asia. Migrates ; occurs N. Africa on passage, and in winter tropical and S. Africa and Asia, east to India.

F. subbuteo jugurtha Hartert and Neumann. Upper parts paler, abdomen, thighs, etc., paler chestnut.

Breeds.—Morocco, Algeria, Tunisia.

Falco columbarius æsalon Tunstall. MERLIN. *Fr.* Faucon émérillon ; *Ger.* Merlinfalke ; *Ital.* Smeriglio ; *Swed.* Stenfalk.

♂ Above slate colour with black shaft streaks, rufous on hind neck ; tail barred black, tip white with a broad apical black band ; beneath rufous buff with narrow dark streaks, thighs striated ; quills black barred white on inner webs ; 2nd and 3rd primaries longest, 1st about equal to 4th. Bill bluish horn, tip black, base below yellow. Cere yellow. Legs and feet pale yellow. Iris dark brown. Wing ♂ 200-210, ♀ 210-231. Tarsus 35-38. Bill 11-13. ♀ Above brown tinged grey, with black shaft streaks, sometimes with rufous bars ; underparts reddish buff with broad brown striations ; quills barred reddish ; under wing coverts, axillaries, and flanks chestnut brown with large white spots. Young very similar to ♀.

Breeds.—British Isles, Faroes, Iceland, Continental Europe north of Baltic, N. Russia to about 68°, Swiss Mountains, W. Siberia. Migrates ; occurs on passage in Urals and at Orenburg, also throughout S. Europe and in winter in Egypt, Palestine, N.W. Africa, but many winter in S. Europe and some as far north as British Isles.

F. columbarius pallidus (Suschkin). ♂ Above pale ashy blue, ♀ paler, more rufous above than ♀ “æsalon.”

Breeds.—Ural Valleys and Kirghiz Steppes ; occurs N.W. India in winter.

The typical race “*F. columbarius columbarius*” is American.

Falco vespertinus vespertinus L. RED-FOOTED FALCON. *Fr.* Faucon Kobez; *Ger.* Abendfalk; *Ital.* Falco cuculo.

♂ Above slate colour; tail uniform; primaries with large white spots on inner web; beneath slaty grey, abdomen, thighs, and under tail coverts rusty red; 2nd primary longest; 1st only sharply emarginate towards point on inner web. Bill bright orange, tip dark bluish. Round eye, cere, legs and feet orange. Iris dark brown. Wing ♂ 230-260, ♀ 230-253. Tarsus 28-30 (W.). Bill 11-12. ♀ Upper parts pale slate with dark bars; crown, nape, and rictal stripe rufous; patch under eye black; below, rusty buff on throat and rusty red on rest of underparts; tail ashy grey barred black. Bill blue grey, yellow at base. Young: crown grey tinged rufous and with black shaft streaks; upper parts grey brown with dark bars and whitish or reddish buff margins; beneath white or yellow buff striated brown; tail reddish grey with black bars. Bill as in adult ♀.

Breeds.—E. Europe from Balkan Peninsula through Hungary, north to Poland, all Russia to far north (Archangel), and in W. Siberia. Irregularly occurs farther west in Europe, rare in British Isles. Migrates; occurs on passage in Egypt and E. Mediterranean, occasionally also in Tunis, Algeria, and rarely in Morocco. Winters in Africa.

Falco naumanni naumanni Fleischer. LESSER KESTREL. *Fr.* Faucon cresserine; *Ger.* Rötelfalk; *Ital.* Falco grillaio.

♂ Above vinaceous chestnut, unspotted; head, neck, rump, upper tail coverts, tail (black tipped), outer wing coverts and secondaries slate blue; greater wing coverts chestnut; beneath reddish buff usually with black spots; 1st and 3rd primaries about equal in length, 2nd longest and emarginate outer web, 1st notched on inner web near tip. Bill dark blue grey, base orange and tip blue black. Cere dark yellow. Eyelid dull yellow. Legs and feet yellow, claws paler than in "tinnunculus," usually white but sometimes black. ♀ Above rusty red, striped dark on head and neck and barred on back, tail with about twelve bars, with black subterminal band and buff tips; beneath rusty buff with dark brown spots. Wing ♂ 220-246, ♀ 230-248. Tarsus 30-32. Bill 11-12.

Breeds.—From Poland south through Austria and Hungary to Greece ; Italy, especially south, Sardinia, Sicily, Spain, N.W. Africa, Steppes of S. Russia north to Orenburg, Caucasus and in W. Asia. Migrates ; occurs in Egypt chiefly on passage, a few breed ; winters in tropical and S. Africa ; rarely occurs in N.W. Europe, including British Isles.

F. naumanni pekinensis Swinhoe. ♂ Greater and part of lesser wing coverts grey with rufous margins.

Eastern Asiatic race ; winters in India and E. and S. Africa ; occurs in Egypt on spring passage.

Falco tinnunculus tinnunculus L. KESTREL. *Fr.* Faucon cresserelle ; *Ger.* Turmfalk ; *Ital.* Gheppio ; *Swed.* Tornfalk.

♂ Above vinaceous chestnut with triangular black spots, crown and nape grey with black shaft streaks, upper tail coverts and tail grey, latter tipped white and with a black subterminal band ; beneath deep reddish buff with large dark spots except on abdomen and under tail coverts ; 1st and 2nd primaries notched on inner web at tip, 1st shorter than 3rd. Bill blue horn with black tip. Cere pale yellow. Legs and feet yellow, claws black. Iris dark brown. ♀ resembles ♀ of "naumanni" but larger. Wing ♂ 230-248, ♀ 250-265. Tarsus 39-41. Bill 13-14. Young : like ♀, but paler.

Breeds.—Europe, including British Isles, from about 68° in Scandinavia and 61° in Russia to Mediterranean ; N.W. Africa ; also in W. Asia. Migratory in north ; occurs Egypt on passage ; in winter ranges to tropical Africa, India, and China. Breeding birds from N.W. Africa are much more brick red on upper parts approaching Canary Island races, but measurements are as in typical form, which certainly occurs there in winter.

F. tinnunculus rupicolæformis Brehm. ♂ Underparts much darker, approaching the very dark race from tropical Africa "F. tinnunculus carlo." ♀ Above darker and redder than ♀ "tinnunculus."

Resident.—Egypt, Nubia, and Palestine.

F. tinnunculus canariensis Koenig. Smaller and darker than "tinnunculus" ; in ♂ head darker grey with broader streaks ; upper parts more brick red. Wing ♂ 215-226, ♀ 226-240 (H.).

Resident.—West Canary Islands (Tenerife, Gran Canaria, Hierro, Palma, Gomera) and Madeira.

F. tinnunculus dacotiæ Hartert. ♂ Paler brick red than in “canariensis,” spots on underparts larger than in “tinnunculus.” ♀ lighter coloured than ♀ “canariensis.” Wing ♂ 214-225, ♀ 225-250 (H.).

Resident.—E. Canary Islands (Fuerteventura, Lanzarote, Allegranza).

AQUILIDÆ.

Includes Eagles, Buzzards, Harriers, Hawks, Vultures, and Osprey.

Nostrils slit-like, ear-shaped or rounded with a visible septum. Cere flat and sharply separated from forehead.

AQUILA.

Tarsus feathered; tail rounded; of large size and heavy but powerful flight, capturing prey by pouncing on it, rarely taken on wing; nest of branches on cliffs, trees, or on ground; eggs variable, bluish white unspotted or blotched and marked with violet grey and rich dark red.

Aquila chrysaëtus chrysaëtus (L.). GOLDEN EAGLE.
Fr. Aigle doré; *Ger.* Steinadler; *Ital.* Aquila reale; *Swed.* Kungsörn.

♂ ♀ fully adult. Above brown with some pale margins, crown, nape and hind neck hackles rufous buff; tail brown with irregular grey bars or patches; beneath chocolate brown; tarsi feathered reddish brown. Younger birds are darker throughout, neck hackles more colour of back and with buff tips; tail, except tip, white, and more white feathers showing on underparts; tarsi feathered white, or white with brown markings. Bill blackish horn, lighter at base; nostrils oblong. Cere, legs and feet yellow, claws black horn. Iris varies, yellowish to hazel brown. Wing ♂ 610-650, ♀ 650-705. Tarsus 96-115. Bill 35-46. Chord of hind claw, ♀ 44.

Resident.—Scotland; Continental Europe to Pyrenees and Mediterranean Islands, S. Russia, Caucasus; and in W. Asia.

A. chrysaëtus occidentalis Olphe-Galliard. Darker coloured, crown and nape less tawny; tarsal feathering brown. Wing ♂ 580-600, ♀ 615-680 (H.).

Resident.—Spain, Morocco, Algeria, Tunis, Tripoli.

Aquila heliaca heliaca Savigny. IMPERIAL EAGLE.
Ger. Kaiseradler.

♂ ♀ adult. Claws and feet much smaller than in "chrysaëtus," ♀ chord hind claw 31. Crown and hind neck paler (almost white in old examples, forecrown generally dark brown) than in Golden Eagle; some white feathers on scapulars; tail grey brown with dark bars and tips, central pair more buff; underparts chocolate brown. Bill bluish black, pale horn at base; nostrils ear-shaped. Cere, legs and feet yellow. Iris in young slate grey, in adults pale yellow with nut-brown markings. Wing ♂ 570-610, ♀ 610-615. Tarsus 90-110. Bill from cere, 42-47 (H.). Young: mottled all shades of brown, buff or black, crown always ochreous or pale rufous brown.

Breeds.—S.E. Europe, Hungary to Balkans, and S. Russia from Novgorod and Orenburg to Caucasus; also Asia to Punjab. Migratory only in north of its range; occurs in Egypt and Arabia in winter; rare in N. and W. Europe.

A. heliaca adalberti Brehm. ♂ ♀ fully adult. Upper parts chocolate brown with tawny tips, forecrown darker; lesser wing coverts white, but only occasionally white feathers on scapulars. Young: above mottled brown, sandy, and clay colour, more or less rufous; paler on crown and hind neck than young "heliaca"; beneath yellowish to reddish buff.

Resident.—C. and S. Spain, also reported from Algeria and Morocco.

Aquila rapax belisarius (Levaillant).

♂ ♀ Light brown, mottled with darker feathers; primaries black; tail faintly barred grey; nostril, long, ear-shaped, vertical. Bill horn blue. Cere, legs and feet yellow. Iris brown. Wing ♂ 530-550, ♀ 540-580 (H.).

Resident.—Morocco, N. Algeria, N. Tunis; has occurred rarely in Spain, Sardinia and Italy.

The typical race "A. rapax rapax" is Central and South African.

Aquila nipalensis orientalis Cabanis.

♂ ♀ adult. Dark brown (occasionally rufous on nape or entire crown); tail faintly barred grey; nostrils long, vertical, ear-shaped. An intermediate plumage is lighter brown generally with some white on wing coverts and upper tail coverts. Bill and claws horn black. Cere, angle of mouth, legs and feet yellow. Iris brown. Wing ♂ 520-570, ♀ 580-615 (H.). Tarsus ♂ 90. Bill ♂ 40. Young: brown, much mixed with rufous on scapulars, secondaries, lesser and median wing coverts, upper tail coverts and underparts including under wing.

Breeds.—Danube Delta, S. Russia north to Kiev and Volga mouth, Caucasus and S.W. Asia; occurs in winter in E. Africa.

The typical race "*A. n. nipalensis*" is Asiatic.

Aquila clanga Pallas. SPOTTED EAGLE. *Fr.* Aigle criard; *Ger.* Grosser Schreiadler; *Ital.* Aquila anatraia maggiore.

♂ ♀ adult. Dark brown, paler on head, with purple gloss on back, upper parts often with much white; nostrils round; 7th primary not over 60 m.m. shorter than longest and outer web markedly emarginated. Bill horn black, bluish towards cere. Cere, legs and feet yellow. Iris brown. Wing ♂ 490-530, ♀ 500-550 (W.). Tarsus 85-100. Bill 43-47. Young: above dark brown, paler and redder on head with dark buff apical drop-like spots on back and large white or buff spots on wings and scapulars; beneath dark brown with broad central stripes of fulvous. In some the spots are more profuse above, and the underparts unspotted red brown; in another variation ("*A. fulvescens*") the upper parts are very white, tinged or mixed with reddish buff and the underparts whitish or deep reddish buff.

Breeds.—From Macedonia and Croatia north through Hungary and Poland to Livonia, Russia to 60° N. and east through Siberia. Rare in Europe to west of breeding range, at least six times in Britain. Partly migratory; occurs Egypt and S. Asia in winter.

Aquila pomarina pomarina Brehm. LESSER SPOTTED EAGLE. *Fr.* Aigle tacheté; *Ger.* Kleiner Schreiadler; *Ital.* Aquila anatraia minore.

♂ ♀ adult. Brown, paler on wings and head and paler altogether than "*clanga*"; bill also weaker; nostrils round;

7th primary more than 60 m.m. shorter than longest, outer web slightly emarginate. Iris dark yellow with fine brown points. Bill bluish black. Cere, legs and feet yellow. Wing ♂ 455-490, ♀ 460-510. Tarsus 90-100. Bill ♂ 27-33, ♀ 29-34 (W.). Young: above dark brown, with purple gloss, paler on lesser wing coverts, feathers with small or in some large apical spots of white or buff, the feathers of head with fulvous tips and on nape often a large fulvous patch; beneath dark brown with fulvous or buff central streaks.

Breeds.—From Baltic Provinces and N. Germany through Poland and W. Russia, Austria and Hungary to Balkans and Greece; also in Caucasus and Asia Minor. Migrates; rarely visits W. Europe; occurs in winter in S.E. Russia, parts of S.E. Europe, and also B.E. Africa and Soudan.

HIERAËTUS.

Nostrils long and oval; legs very long; tarsi feathered to toes which are large and stout; claws very large, strong, and curved; of powerful flight, hunting like Falcons and Hawks; nest in cliffs or trees; eggs two, bluish white, slightly marked rufous.

Hieraëtus fasciatus fasciatus (Vieillot). BONELLI'S EAGLE. *Fr.* Aigle à queue barrée; *Ger.* Habichtsadler; *Ital.* Aquila del Bonelli.

♂ ♀ Above brown, feathers white at bases; beneath white with narrow dark shaft streaks broadening to a long drop; under wing coverts black and white; tail dull grey with faint black bars and terminal band. Bill blue grey, tip darker. Toes yellowish. Iris orange to dark yellow. Wing ♂ 460-490, ♀ 500-550. Tarsus 92-97. Bill 27-35. Middle toe with claw 65. Young: paler brown, reddish on head; beneath (including under wing coverts and axillaries) reddish buff to red brown with black shaft streaks except on abdomen and under tail coverts and generally thighs.

Resident.—S. France, Spain, Portugal, N.W. Africa, Sardinia, Corsica, Sicily, Greece to Rumania, Egypt and Nubia, Asia Minor and S.W. Asia to India and China.

Hieraëtus pennatus (Gmelin) BOOTED EAGLE. *Fr.* Aigle bottée ; *Ger.* Zwergadler ; *Ital.* Aquila minore.

♂ ♀ 2 plumages. (1) Above mottled dark and light brown, paler and redder on head, shaft streaks darker, in some a patch of white on scapulars ; beneath white, some very fulvous, with darker shaft streaks. (2) All dark brown, mottled with pale brown on upper parts, secondaries pale ; dark shaft streaks on under parts. Bill bluish horn, tip black. Cere and feet yellow. Iris yellowish, in young brown. Wing ♂ 355-380, ♀ 390-415. Tarsus 58-62. Bill 22-27.

Breeds.—Mountains and forests of C. and S. France, Spain, Portugal, N.W. Africa (Tunis to Morocco), Sicily, Poland, Austria, and Hungary to Rumania and S. Russia ; also S.W. Asia to India. Migrates ; occurs on passage in Sardinia (rare), Italy, Greece ; in winter Egypt, Nubia, N.E. Africa, and India.

BUTEO.

Eagle-like, with long wings but short partly bare tarsus ; nostrils longish ; first 4 primaries markedly emarginate, 5th less so (in Eagles first 5 are strongly emarginate, 6th slightly) ; of heavy flight, rarely taking prey on wing ; food, reptiles, small mammals, etc. ; nest of sticks in trees or rocks ; eggs white tinged pale bluish more or less spotted or blotched with pale violet grey and deep reddish brown or rufous.

Buteo buteo buteo (L.). BUZZARD. *Fr.* Buse ; *Ger.* Mausebussard ; *Ital.* Pojana ; *Swed.* Musvåg.

♂ ♀ Above brown with generally a few rufous marks ; tail barred (at all ages) with grey, sometimes white with rufous tinge ; beneath dark brown, mottled and barred with buff or white ; under tail coverts white with brown bands, but often not barred ; in some adults underparts are white or creamy streaked with long dark spots (this is also a sign of youth) ; tarsus feathered to within 45 m.m. of toe-joints ; very variable in plumage ; bill is weaker than in "*B. ferox*" and tail is shorter. Bill horn black, bluish towards base. Cere, legs and feet yellow. Iris yellowish

brown to yellowish white, in young brown. Wing ♂ 375-400, ♀ 375-410. Tail 190-210. Tarsus 70-76. Bill 24-26.

Breeds.—Great Britain; Continental Europe from about 65° to Mediterranean, west of a line from Baltic Provinces and Poland, Carpathians, and west of Balkan Peninsula. Chiefly resident. Rare in Egypt and Asia Minor; occurs occasionally N.W. Africa; rare Ireland, recently exterminated there as a resident.

B. buteo arrigonii Picchi. Smaller than "buteo"; plumage shows much rufous on upper parts and underparts are deep buff striped with long drop-like markings, flanks brown; is closer to "zimmermannæ" but with much less red on tail. Wing 346-385 (H.).

Resident.—Sardinia and Corsica.

B. buteo insularum Floericke. Smaller than "buteo," and rarely shows any rufous margins to upper parts, even in young; tail much redder than ever the case in "arrigonii." Wing ♂ 345-360, ♀ 370-384 (H.).

Resident.—Canary Islands.

B. buteo zimmermannæ Ehmcke. Adults generally have more rufous on upper parts than in "buteo," and also on underparts and tail, and under tail coverts are generally distinctly barred with red brown, approaching "B. b. vulpinus."

Breeds.—N. and C. Russia, Baltic Provinces, E. Germany, Rumania, and E. Balkans. Partly migratory; has occurred in E. Africa in winter. Many birds from this breeding range are indistinguishable from typical "buteo."

B. buteo vulpinus Gloger. ("Buteo desertorum" of authors.) A very red form especially on underparts, which are uniform dark rufous or mottled with white; tail very rufous but rarely losing altogether traces of barring as so often is the case in "B. ferox"; under wing coverts and axillaries rufous; in another phase, not apparently confined to youth, underparts are white with long red brown spots or streaks.

Breeds.—S.E. Russia from Volga to Caucasus and in W. Siberia to C. Asia; Asia Minor. Occurs Egypt and Balkans on passage; winters in C. and S. Africa and India; rare in W. Europe, once occurred England.

B. buteo harterti Swann. Large, dark race, darker than "zimmermannæ"; underparts almost uniform dark to red brown; abdomen barred in adults; tail with 10-12 dark bars. Wing ♂ 375, ♀ 412 (H.).

Resident.—Madeira.

B. buteo rothschildi Swann. Reddish brown; tail light grey with 7 to 9 bars, subterminal one being broad; underparts uniform dark red brown; ventral region may be barred and spotted buff. Wing ♂ 340-360, ♀ 375-398 (H.).

Resident.—Azores.

Buteo lagopus lagopus (Brunnich). ROUGH-LEGGED BUZZARD. *Fr.* Buse pattue; *Ger.* Rauhfußbussard; *Ital.* Pojana calzata; *Swed.* Fjösbent Wräg.

♂ ♀ Upper parts dark brown, crown and nape white striated, basal parts of inner webs of quills white; tarsi feathered in front to toes; tail white, apical third brown with greyish white tip; chin and throat white streaked brown, upper breast dark brown mottled white, rest of underparts barred white and dark brown. Bill dark horn, bluish at base. Cere and toes yellow. Iris brown. Wing ♂ 415-433, ♀ 430-470. Tarsus 70-73. Bill 22-23. Young darker, breast streaked not barred, rest of underparts almost uniform dark brown.

Breeds.—Scandinavia, Lapland, Finland, N. Russia from about 69-50° N. south occasionally to about 56°, Baltic Provinces (rare). Partial migrant; occurs British Isles in winter, and also Central Europe to Pyrenees and Alps, and S. Russia, rarely to Greece and other Mediterranean countries.

Buteo ferox ferox (Gmelin).

Has various phases of plumage.

(a) Above brown, with some rufous margins; tail grey brown barred, inner webs of tail and quills white; beneath creamy white with broad brown streaks, under wing coverts and axillaries white with red brown shaft streaks.

(b) Above darker brown, margins broader and more chestnut; tail pale cinnamon not barred; beneath chestnut with dark shaft lines, barred in some, mottled in others with black feathers, or altogether uniform chestnut; under wing coverts and axillaries chestnut.

(c) There is also a melanistic form, all dark brown.

Inner webs of quills and tail in all phases grey or white ; combinations of plumages (a) and (b) also occur. Bill blackish horn. Cere and feet yellow. Iris brown to yellowish brown. Wing ♂ 425-455, ♀ 440-500. Tarsus 83-86. Bill 30-33. Tail 230-270.

Breeds.—Greece, Asia Minor and Palestine, Steppes of S. Russia east of Don north to Orenburg and Caspian Steppes, also W. and C. Asia. Occurs on passage Rumania, Turkey, and Caucasus ; in winter in Egypt and N.E. Africa south to White and Blue Niles, also in India. Rare visitor to Central Europe.

B. ferox cirtensis (Levaillant). (a) Adult. Smaller and redder than "ferox" ; above brown with rufous margins ; tail and thighs uniform pale cinnamon, former sometimes with white on inner webs ; beneath varying from buffy white to deep rufous with dark shaft lines, under wing coverts and axillaries rufous.

(b) Tail barred ; underparts white to creamy buff with broad dark streaks and sometimes a dark band across abdomen, under wing coverts and axillaries white, creamy or partly rufous. Wing ♂ 360-380, ♀ 380-400. Tarsus 75-85. Tail 205-220 (H.).

Young in first plumage are much redder, almost chestnut throughout.

Breeds.—N.W. Africa, Morocco to Tunis. Probably largely resident.

All races of "ferox" are distinguishable from those of "buteo" by their more powerful bills and feet.

CIRCUS.

Birds of long and slender form with slight ruff as in Owls. Nostrils longitudinal ; tail long ; legs long, slender, upper half of tarsus feathered in front, claws very sharp. Partial to marshy localities, quartering ground for prey of small mammals, birds, reptiles, fish, eggs, etc. ; nest on ground ; eggs bluish white, occasionally with a few rufous spots.

Circus æruginosus æruginosus (L.). MARSH-HARRIER. *Fr.* Busard harpaye ; *Ger.* Rohrweihe ; *Ital.* Albanella ; *Swed.* Sumphök.

♂ Above dark brown, crown and nape rufous with dark striations, greater coverts, inner primaries, secondaries and tail ashy grey; beneath rufous striated brown; ruff interrupted in front. ♀ Above paler, crown and generally some feathers on carpal ridge ochreous buff; wings, tail, and underparts uniform red brown. Bill blue black. Cere, legs, feet and iris yellow. 1st primary between 5th and 6th, 4th longest. Wing ♂ 385-420, ♀ 385-430. Tarsus 78-86. Bill 23-27. Young: uniform intense dark brown; crown (variable), chin, and generally a patch on breast ochreous buff.

Breeds.—British Isles (rare); Continental Europe from S. Sweden and about 59° in N. Russia south to Mediterranean and east to Urals; Lower Egypt; and in W. Asia. Migrates; occurs N. Africa on passage. Winters tropical Africa and India. Rare visitor Norway, Denmark, Faroes, Madeira, Canary Islands.

C. æruginosus harterti Zedlitz. ♂ Upper parts darker; crown whiter, streaks more distinct; more white on carpal ridge; beneath variable; some very white with rufous on abdomen and thighs; others deep brown and rufous with white only on throat and breast. ♀ Whiter on crown and carpal ridge than ♀ "æruginosus."

Resident.—N.W. Africa and possibly S. Spain and Egypt.

Circus cyaneus cyaneus (L.). HEN-HARRIER. *Fr.* Busard Saint-Martin; *Ger.* Kornweihe; *Ital.* Albanella reale; *Swed.* Bla Kärrhök.

♂ Above grey, occasionally with brown shade; central tail feathers grey, the others white, irregularly barred or spotted grey; upper tail coverts white; beneath, throat and chest grey, breast, abdomen, and under tail coverts white; primaries white at base, inner webs of secondaries entirely or partly white; under wing coverts white; ruff complete. ♀ Above brown, some rufous margins; a white patch above and below eye; primaries beneath white with dark bars; underparts reddish buff streaked dark brown. Bill black, bluish at base. Cere, legs, feet, and iris yellow. 1st primary shorter than 6th, 2nd to 5th emarginate. Wing ♂ 333-355, ♀ 372-392. Tarsus 66-73. Bill 19-21. Young: more rufous especially on head and underparts.

Breeds.—British Isles; N. and C. Continental Europe from about Arctic Circle south to Pyrenees and N. Italy, east to Urals; and throughout N. Asia. Migrates; winters in Egypt and N.W. Africa (rare), E. Africa and India; occasional birds winter in S. Europe.

Circus macrourus (Gmelin). PALE HARRIER. *Ger.* Steppenweihe; *Ital.* Albanella pallida.

♂ Above grey, upper tail coverts and tail feathers except central pair barred white; beneath white, throat and upper breast tinged grey; ruff complete. ♀ like ♀ “cyaneus” but upper tail coverts with rusty spots and underparts tinged rust colour. Bill slaty black, bluish at base. Iris golden yellow. Cere, legs and feet yellow. 1st primary about equal to 6th, 2nd to 4th emarginate, 5th not emarginate; emargination of 2nd begins close to coverts. Wing ♂ 340-360, ♀ 340-373. Tarsus 65-71. Bill 18-22. Young: almost uniform rufous on underparts, similar to young of “pygargus”; iris brown.

Breeds.—Baltic Provinces, S. and C. Russia to about 57° N., Rumania, Bulgaria; also S.W. Siberia and C. Asia. Occurs on migration in Germany (some breed) and S.E. Europe, Asia Minor, and N.W. Africa. Winters in Egypt (where some breed) and Africa south to Cape Colony and S. Arabia and India. Rare visitor to W. Europe.

Circus pygargus (L.). MONTAGU'S HARRIER. *Fr.* Busard cendré; *Ger.* Weissenweihe; *Ital.* Albanella minore; *Swed.* Mindre Kärnhök.

♂ Above grey; primaries black, secondaries white on inner webs, with two dark bars visible above; beneath, throat and breast grey, abdomen white streaked rufous; ruff interrupted in front. ♀ like ♀ “macrourus,” best distinguished by wing formula. Bill horn black, greenish grey at base below. Cere, legs and feet yellow. Iris yellow. 2nd to 4th primaries emarginate outer webs, emargination of 2nd begins about 30 m.m. beyond coverts. Wing ♂ ♀ 355-380. Tarsus 57-61. Bill 16-19.

Breeds.—England; Continental Europe south of Baltic, S. and C. Russia and Urals from about 57°; N. Morocco; also C. Asia to Mongolia. Migrates; occurs on passage Mediterranean Islands, Tunisia, and Algeria. Winters in Egypt, tropical and S. Africa, and India.

ASTUR.

Size moderate; wing short and rounded; lower part of tarsus bare, covered with transverse oblong scales as in Buzzards. Swift, bold, and rapacious; nest on trees; eggs pale bluish or greenish white, markings ill-defined or none.

Astur gentilis gentilis (L.). GOSHAWK. *Fr.* Autour; *Ger.* Hühnerhabicht; *Ital.* Astore; *Swed.* Dufhök.

♂ ♀ Above grey brown, ear coverts brown; beneath white barred brown, tail indistinctly barred. Bill bluish horn. Cere greenish yellow. Legs and feet yellow. Iris orange yellow. Wing ♂ 310-335, ♀ 350-383. Tarsus ♂ 70, ♀ 73-80. Bill ♂ 20-22, ♀ 25-28. Immature plumage: underparts with long oval brown drop-like spots, tail distinctly barred. Young: first plumage above browner, rufous on hind neck and underparts.

Resident.—Continental Europe from forest limit to Mediterranean, Sicily, N. Morocco, and Algeria; also Asia Minor. Rare visitor to Britain, Portugal, Malta, Cyprus, Egypt, and Tunisia.

The Central and S. European birds have been separated as "*A. g. gallinarum*" Brehm on account of young being lighter coloured than those from typical region (Scandinavia).

A. gentilis arrigonii Kleinschmidt. Smaller, darker above, ear coverts black, bars on underparts much darker. Wing ♂ 297-306, ♀ 335-346 (H.).

Resident.—Corsica and Sardinia.

A. gentilis schvedowi Menzbier. Above greyer, less brown; beneath bars much narrower. Wing ♂ 290-333, ♀ up to 360 (H.).

A North Asian race, whose range extends to Orenburg and Lower Volga.

A. gentilis albidus Menzbier. A pure white form with faint bars, streaks or mottling of pale grey brown according to sex or age.

Breeds.—Siberia, but occurs west to Archangel and N. Caucasus.

A. gentilis atricapillus (Wilson). Above like "schvedowi"; beneath with broad black shaft stripes and irregular ashy grey bands.

A North American race; is said to have occurred Ireland and Scotland.

ACCIPITER.

Wing shorter and more rounded; tarsus long, lower part bare; swift, active and bold in hunting; nest of sticks on trees or rocks; eggs pale blue, spotless or blotched and spotted with reddish brown.

Accipiter nisus nisus (L.). SPARROW-HAWK. *Fr.* Épervier; *Ger.* Sperber; *Ital.* Sparviere; *Swed.* Sparfhök.

♂ Above slaty grey, cheeks rufous, feathers of crown and nape with white bases; beneath white barred rufous; quills and tail above with dark bars, below greyish white with dark bars; flanks rufous, under tail coverts uniform white or slightly spotted. ♀ Above browner, cheeks and feathers of crown and nape as in ♂; beneath white barred brown, flanks rufous in some, occasionally entire underparts rufous (said to attain plumage of ♂ in advanced age). Bill slate, tip darker. Cere yellowish. Legs and feet yellow. Iris orange. Wing ♂ 183-205, ♀ 210-250. Tarsus ♂ 50-55, ♀ 56-61. Middle toe over 40. Bill ♂ 10-12, ♀ 11-14. Young: more or less rufous about head and neck and brown with rufous margins on upper parts; underparts white barred brown or with round spots and cross bars connected with shaft lines.

Breeds.—British Isles and Continental Europe, Urals, Caucasus and in W. Asia. Partly migratory; occurs in winter N.W. Africa, Egypt, Arabia and Soudan.

"A. nisus galliæ" Kleinschmidt from France is not separable.

A. nisus puniceus Erlanger. ♂ Slightly paler on upper parts and with a more rufous appearance on underparts. Wing ♂ 203-212, ♀ 243-255 (H.).

Resident.—N.W. Africa; probably also breeds S. Spain. Has occurred Malta.

A. nisus granti Sharpe. Founded on ♀; back darker, underparts in some more broadly barred and bars blacker. Size inclined to be smaller. Wing ♂ 189-199, ♀ 222-232 (H.). (All specimens of ♀ can be matched in a series of "nisus," but two ♂ from Tenerife are very rufous on breast.)

Resident.—Madeira, Canary Islands (Tenerife and Gran Canaria).

A. nisus wolterstorffi Kleinschmidt. Smaller and darker, under tail coverts always barred or spotted (traces of these are seen in typical form). Wing ♂ 181-183, ♀ 216-222 (H.).

Resident.—Corsica, Sardinia.

Accipiter brevipes (Severtzoff).

♂ Resembles "nisus" but larger, cheeks grey, bars on underparts broader, bill, legs and feet more massive, tarsus and middle toe shorter. Bill black. Cere, legs and feet yellow. Iris reddish brown with inner yellow ring. ♀ Above brown grey; beneath white, throat with brown spots, remainder with reddish brown bars becoming narrower near the vent and disappearing on under tail coverts. Wing ♂ 215-222, ♀ 229-240. Tarsus 46-49. Middle toe 28-29. Bill from cere 12-13 (H.). Young: beneath white with very large drop-like brown streaks.

Breeds.—Balkan Peninsula, Greece, Rumania, and S. Russia to Caucasus; also Asia Minor and Palestine. Migrates; occurs Egypt, Arabia, and S.W. Persia in winter; rare visitor to Europe west of breeding range.

MILVUS.

Tarsus short, lower half bare and covered with broad scales in front; tail long, forked; resemble Eagles and Buzzards in habits but often seen soaring at high altitudes; food, small mammals and birds, reptiles, insects, etc.; nest on trees or cliffs; eggs resemble those of Buzzards, but variable.

Milvus milvus milvus (L.) KITE. *Fr.* Milan royal; *Ger.* Gabelweihe; *Ital.* Nibbio; *Swed.* Glada.

♂ ♀ Above dark brown, with conspicuous rufous margins; tail deeply forked, rufous; crown, neck and throat buffy white with

dark central streaks ; beneath chestnut broadly streaked black ; primaries with white on inner web of under surface. Bill blackish horn, bluish at base. Cere, skin round eye, legs and feet yellow. Iris whitish yellow. Wing 475-530. Tail fork 70-86 (H.). Tarsus 51-55. Bill 29. Young : underparts buff with rufous margins.

Breeds.—British Isles (Wales) ; Europe south from about 61° N. in Scandinavia ; in Russia west of Dnieper to Tula and Moscow Govts., and in S.E. to Don Basin ; N.W. Africa, W. Canary Islands ; also Asia Minor and Palestine ; rare in Balkan Peninsula. Migratory in north. Winters in S. Europe and N. Africa.

Milvus migrans migrans (Boddaert). BLACK KITE.
Fr. Milan noir ; *Ger.* Brauner Milan ; *Ital.* Nibbio nero.

♂ ♀ Resemble "milvus" but less white on head, and little or no rufous on remainder of upper parts except on wing coverts ; tail less forked, brown barred darker ; beneath much duller chestnut, primaries grey or mottled on inner webs below, under wing coverts and axillaries chestnut. Bill black. Legs and feet dull yellow. Cere yellow. Iris yellowish brown. Wing 445-465. Tarsus 52-57. Bill 26-29. Tail fork 30-35. Young : dark brown with buff tips giving a spotted appearance.

Breeds.—Russia from 63° N. to extreme south and east, Poland, Germany, Switzerland, S. France, Spain and Portugal ; N.W. Africa ; also through Austria and Hungary to Balkan Peninsula, but not Greece ; W. Asia. Winters in tropical Africa. Rare visitor Sweden, Finland, Denmark, Holland, Belgium, Britain.

M. migrans ægyptius (Gmelin). Resembles "migrans" but crown more rufous with narrow streaks, and rather more rufous on upper parts. Bill yellow in adults. Tail more deeply forked. Wing 430-458. Tail fork 35-47 (H.).

Breeds.—Egypt, Arabia, Jordan Valley. Apparently resident.

Milvus lineatus (Gray).

Resembles "M. migrans migrans" but head brown, ear coverts dark, inner web of outer primaries white at base (conspicuous in flight) ; underparts browner, less rufous, abdomen and under tail coverts much paler than breast. Wing ♂ 445-485,

♀ 475-520. Bill from cere 25.5-30 (H.). Young : chocolate boldly streaked with white or buff.

A Central Asian breeding bird, whose range extends to Perm, Ufa, and Orenburg.

HALIAËTUS.

Beak very long, strong, nares oval ; upper mandible at first straight then strongly curved near tip ; lower part of tarsus bare ; claws very powerful and much curved ; food, fish, waterfowl, mammals, carrion, etc. ; nest in rocks or trees ; 2 eggs, white, occasionally marked pale brown.

Haliaëtus albicilla (L.). WHITE-TAILED EAGLE. *Fr.* Pygargue à queue blanche ; *Ger.* Seeadler ; *Ital.* Aquila di mare ; *Swed.* Hafsörn.

♂ ♀ · Brown ; head, throat, and chest paler, more buff ; tail white, rounded, 12 feathers ; $\frac{1}{3}$ of tarsus bare. Bill, cere, and iris yellow. Legs and feet yellow. Wing ♂ 595-630, ♀ 650-710. Tarsus 90-100. Bill from cere 48-55 (H.). Young : mottled blackish brown and fulvous grey, crown and nape black, tail black freckled grey on inner webs ; iris brown.

Breeds.—Europe to Arctic regions, Kolguev, Nova Zembla, Iceland ; south to Pyrenees, Corsica, Sardinia, Balearic Islands, Hungary, Balkan Peninsula, S. Russia and Caucasus ; also N. Asia and Asia Minor. Migratory in north ; occurs in winter in S. Europe and N. Africa ; occasionally wanders to British Isles, where it formerly bred. Rare visitor Spain.

Haliaëtus leucoryphus (Pallas).

♂ ♀ Above deep umber ; crown, nape, and hind neck ochreous ; tail 12 feathers, brown with a broad white central bar ; beneath rufous brown, throat and sides of head yellowish white, ear coverts dark brown. Bill horn black. Cere greyish blue. Legs and feet dull yellow. Iris brown to greyish yellow. Wing 565-615 (♀ larger than ♂). Bill from cere 44-47 (H.). Young : paler ; crown, nape, and hind neck more rufous ; tail black, without the white bar.

Breeds.—S. Russia, Crimea to Lower Volga and Ural Mountains ; and through Central Asia ; probably also in Asia Minor (Taurus) and Syria. Apparently resident.

PERNIS.

Feathers of face and lores close, stiff, and scale-like, no bristles; bill rather feeble; heavy and slow like Buzzards, feeding on reptiles and insects, especially larvæ of wasps and bees, or even vegetable food in spring and berries in autumn; nest in tree; eggs roundish, closely blotched with red brown on a red or yellowish brown ground.

Pernis apivorus apivorus (L.). HONEY BUZZARD. *Fr.* Bondrée; *Ger.* Wespenbussard; *Ital.* Falco pecchiaiola; *Swed.* Bivräk.

♂ ♀ Subject to much variation. Above brown with dark shaft streaks, crown and face sometimes grey; beneath, white with dark brown shaft lines and spots on breast and bars on abdomen and flanks, or uniform dark brown with partly concealed white bars on underparts; head covered with short, stiff, scale-like feathers (which identify at all ages). Bill horn black. Cere bluish grey, yellowish next bill at base below. Legs and feet yellow. Iris orange yellow. Wing 370-440 (♀ the larger). Tarsus 52-60. Bill 22-26. Young: iris brown grey to yellow grey. Cere and base of bill below yellow.

Breeds.—N. and C. Europe; Denmark, Holland, Belgium (rare), Russia from 66° N., Ural from 58° N., south to N. Spain, Switzerland, N. Italy, Montenegro, Bulgaria, and Rumania; occasionally British Isles. Migrates; occurs on passage S. Europe, Egypt, and N.W. Africa. Winters in tropical Africa.

ELANUS.

Wing long and pointed; chin feathers thin and bristle-like, and over eye strong eyelashes; tarsus short, $\frac{3}{4}$ feathered; about Kestrel size, but like Harriers in habits; partly crepuscular; food, chiefly small mammals and insects; nest on tree; eggs yellowish white, blotched and clouded with dark foxy red and blood red.

Elanus cæruleus cæruleus (Desfontaines). BLACK-WINGED KITE.

♂ ♀ Above grey, lesser and median wing coverts black; under-

parts and axillaries white. Bill black, yellow at base below. Cere, legs and feet yellow. Iris carmine. Wing 258-283. Tarsus 32-34. Bill from cere 16-19 (H.). Young: above grey brown, wing coverts black, quills and axillaries with white tips; beneath white tinged rufous with dark brown shaft streaks. Iris grey brown.

Resident.—Spain and Portugal (rare), N.W. Africa, Egypt; and through entire Africa and S. Asia as far as Burmah. Of exceptional occurrence in C. and W. Europe; reported twice from Belgium and Germany and once from Ireland.

CIRCAËTUS.

Tarsus bare, covered with hexagonal scales; nasal and rictal bristles well developed; resemble Buzzards in heavy flight; food, reptiles, fish, insects, etc.; nest in trees, bushes, or cliffs; egg, one, white. Genus chiefly African.

Circaëtus gallicus (Gmelin). SHORT-TOED EAGLE. *Fr.* Jean-le-blanc; *Ger.* Schlangenadler; *Ital.* Biancone.

♂ ♀ Plumage varies; above brown, basal part of inner web of primaries white, secondaries white with dark bars; beneath throat and chest uniform brown or in some showing white margins; or crown sometimes white with brown central streaks, and underparts almost entirely white with a few light brown tips. Bill greyish black. Cere yellowish to white. Legs and feet dull flesh colour. Iris yellow. Wing 510-560. Tarsus 90-95. Bill from cere 36-39 (H.).

Breeds.—C. and S. France, Spain and Portugal, N. Africa (Morocco to Egypt), Italy to N. Germany and Poland, C. and S. Russia, Balkan Peninsula and Greece; also W. Asia to India and China. Migrates; occurs in winter Arabia and C. Africa.

PANDION.

Tarsus short and bare; outer toe reversible; soles of feet rough; bill short; nostrils oval; nuchal feathers elongated; food chiefly fish; nest on trees or rocks.

Pandion haliaëtus haliaëtus (L.). OSPREY. *Fr.* Balbusard; *Ger.* Fischadler; *Ital.* Falco pescatore; *Swed.* Fiskljuse.

♂ ♀ Above dark brown, crown and nape buffish white, crown

dark striped ; underparts white, sometimes striped dark brown on throat and breast. Bill horn black. Cere greyish blue. Legs and feet pale lead colour. Iris yellow (brown in young). Wing ♂ 450-495, ♀ 470-510. Tarsus 58-69. Bill from cere 30-35 (W.).

Breeds.—Continental Europe from far north, N. and more rarely C. Russia, Spain, Balearic Islands, Corsica, Sardinia, Greece, N.W. Africa, Canary Islands, Egypt ; and in N. Asia to Pacific and in S.W. Asia ; in many parts of Europe extinct as breeding, *e.g.* Britain, Holland, Belgium, France, Austria, Rumania. Migrates ; winters in tropical Africa.

GYPAËTUS.

Head feathered ; nostrils and cere concealed by bristles ; tuft of bristles on chin ; carrion-eaters of solitary habits, inhabiting mountain districts ; nest in cliffs ; eggs yellowish orange, sometimes blotched with reddish brown.

Gypaëtus barbatus barbatus (L.). BEARDED VULTURE.

Ger. Lammergeier.

♂ ♀ Above black, greyish on quills ; crown and neck rufous cream, hind neck reddish buff, line across forecrown, patch over eye, lores and bristles black ; beneath deep rust colour, occasionally a few black feathers on throat, axillaries and tail with buff shaft lines. Bill bluish horn with black tip. Legs and feet plumbeous. Iris orange, sclerotic blood red. Tail 12 feathers, wedge-shaped. Wing 715-790. Bill from cere 48-50 (H.). Young : head and neck black, some chestnut tips on throat ; beneath browner.

Resident.—N.W. Africa ; Atlas of Morocco, Algeria and Tunis.

G. barbatus grandis Storr. Larger, with numerous black feathers on throat ; a patch of feathers on each side of breast has dark brown edges, they sometimes almost meet in middle. Wing 760-860 (H.).

Resident.—S. Europe ; Spain, Pyrenees, Alps, Corsica, Balkans, Greece ; east through Asia Minor to Caucasus, and also farther east in Asia ; Egypt. Extinct as a breeding bird in Sardinia and Sicily, and rapidly becoming so in many other localities.

NEOPHRON.

Bill long and slender; forecrown, sides of head and throat bare; tail wedge-shaped, 14 feathers; valuable scavenger about towns and villages; eggs white or ochreous, richly blotched with dark red.

Neophron percnopterus percnopterus (L.). EGYPTIAN VULTURE. *Ger.* Aasgeier; *Ital.* Capovaccajo.

♂ ♀ Creamy white, long occipital feathers darker, primaries black. Bill dusky black, yellow at base. Cere and bare part of head yellow. Legs and feet dark flesh. Iris deep red. Wing 475-520. Tarsus 75-85. Bill from cere 31-35 (H.). Young: brown, feathers broadly tipped and margined fulvous.

Breeds.—S. France, Spain, Portugal, Italy, S.E. Hungary, Balkans, Greece, S. Russia to Caucasus, Egypt, N.W. Africa, Canary Islands; also S.W. Asia to India and widely in Africa. Migratory in Europe. Has occurred twice in England.

GYPS.

Head bare or covered with down; nostrils exposed, oval and perpendicular; wings long and rounded, tail rounded, 14 feathers; food, carrion; soar at great altitudes; nest usually in communities in cliffs; egg one, white, rarely marked red.

Gyps fulvus fulvus (Hablizl). GRIFFON VULTURE. *Fr.* Vautour griffon; *Ger.* Gänsegeier; *Ital.* Grifone.

♂ ♀ adult. Above pale brown, head covered with white hairs, neck with a white downy ruff; underparts red brown. Bill slate. Legs and feet light brown. Iris hazel. Cere dark slate. Wing 690-750 (H.). Tarsus 90-110. Bill 68. Young: more rufous, head and neck covered with white down, ruff replaced by frill of long narrow feathers, reddish brown with buff shafts.

Resident.—Mediterranean Basin and Islands, north to Pyrenees, N. Italy, S. Hungary, Rumania; S. Russia to Caucasus; also S.W. Asia to Himalayas and in Red Sea Basin. Once occurred Ireland.

ÆGYPIUS.

Bill higher than broad; nares round; head and throat covered with down, neck naked at sides and back; nest in tree; eggs white marked with red.

Ægypius monachus (L.). BLACK VULTURE. *Ger.* Mönchsgeier; *Ital.* Avvoltoio.

♂ ♀ Dark brown; down on head and throat brownish white; naked neck livid blue; round neck a ruff of long pale brown feathers. Bill dark horn, paler below. Cere bluish. Legs and feet pearly white. Iris hazel. Wing 760-840. Tarsus 130. Bill from cere to tip 61-67 (H.).

Resident.—Spain and Portugal, N. Morocco, Sardinia, Sicily, S.E. Europe from Austria and Hungary to Balkans; Crimea, Caucasus and north to Orenburg; Egypt; and widely in Asia.

OTOGYPS.

Nostrils oval, perpendicular; head and neck with little down.

Otogyps auricularis (Daudin).

♂ ♀ General colour brown; head and neck nearly naked, bluish grey to dull reddish violet; on the chin some long black hairs; beneath feathers of underparts is a thick white down, becoming brown on thighs; on lower neck a frill of lanceolate brown feathers with paler margins; these extend down centre of breast. Bill blackish horn. Cere slaty grey. Legs and feet blue grey. Iris dark brown. Wing 750-790. Tarsus 130. Bill from cere 70-74 (H.).

An African species, whose range extends to Lower Egypt.

GRESSORES.

Storks, Herons, Ibises, Spoonbills. Hind toe always present and comparatively long; toes more or less connected at base; oil-gland feathered. Nestling; helpless, thickly covered with down.

CICONIIDÆ.

No powder-down patches; sternum with two incisions behind; claws blunt; tarsus hexagonally scaled.

CICONIA.

Bill straight; nostrils short horizontal slits; part of lores and chin bare; lower feathers of neck elongated; frequent damp places, feed on frogs, small mammals, insects; nest of sticks in tree or on building; eggs 3-5, white.

Ciconia ciconia ciconia (L.). WHITE STORK. *Fr.* Cigogne; *Ger.* Storch; *Ital.* Cigogna; *Swed.* Stork.

♂ ♀ White; wings (except lesser wing coverts) and scapulars black; naked lores and skin round eye black; chin black and red. Bill, legs and feet red. Wing ♂ 530-630, ♀ 530-590. Tarsus 195-240. Bill ♂ 150-190, ♀ 140-170 (W.).

Breeds.—Continental Europe from S. Sweden and Russia about 60° N. to Mediterranean (not in Belgium or France except N.E.); N.W. Africa (Morocco to Tunis); also Asia Minor, W. and C. Asia. Migrates; winters in C. and S. Africa. Of occasional occurrence in Britain.

Ciconia nigra (L.). BLACK STORK. *Ger.* Schwarzer Storch; *Swed.* Svart Stork.

♂ ♀ Breast, abdomen, under tail coverts and axillaries white; rest of plumage black with green or purple gloss; bare skin on chin, round eye and of lores red. Bill, legs and feet orange red. Wing 520-600. Tarsus 180-200. Bill 160-190 (W.). Young: brown, abdomen white.

Breeds.—S. Sweden, Denmark, Germany, Austria, Hungary, Lower Danube valley; Spain and Portugal (rare); and east through Russia from about 60° N.; also N. and C. Asia to Pacific. Migrates; occurs in winter in Africa, India, and China. Rare visitor Britain, Norway, Finland.

IBIDIDÆ.

Ibises and Spoonbills. One incision posterior edge sternum. No powder-down patches. Bill long and thin, either sickle-shaped or flat.

PLATALEA.

Bill long, flat, expanding into a broad disc towards tip. Resemble Storks in habits; feed on small fish, frogs, crustaceans, insects; nest of sticks in marshes on ground among reeds or on trees; eggs 3-4, dull chalky white spotted pale red.

Platalea leucorodia leucorodia L. SPOONBILL. *Fr.* Spatule blanche; *Ger.* Löffler; *Ital.* Spatola.

♂ ♀ White, with yellow tinge on chest and crest feathers; naked skin of throat and round eyes yellow. Bill black, yellow at tip. Legs and feet black. Iris red. Wing ♂ 360-397, ♀ 360-375. Tarsus 120-145. Bill 180-223 (H.).

Breeds.—Holland, S. Spain, Hungary, Rumania, Jugo-Slavia, Russia (Bessarabia, Pinsk Marshes, and on Lower Volga to 49°), Caucasus; also W. and C. Asia and N.E. Africa. Migrates; occurs occasionally Britain (Norfolk) and on passage France (where no longer breeds), N. Africa. Winters tropical Africa and India.

P. leucorodia major Temminck and Schlegel. Larger. Wing to 405. Bill 235.

Breeds.—From Egypt through C. Asia to India and China. Migratory in north, resident in south of its range.

PLEGADIS.

Bill long, sickle-shaped; nostrils slit-like; tibia half bare. Resemble Curlews in habits; frequent marshes, lagoons, etc.; nest of flags and aquatic plants in marshes in colonies, on ground or on bushes; eggs 3, dark greenish blue.

Plegadis falcinellus falcinellus (L.). GLOSSY IBIS. *Fr.* Ibis falcinelle; *Ger.* Brauner Ibis; *Ital.* Mignattaio; *Swed.* Svart Ibis.

♂ ♀ summer. Crown, face, wings, and back coppery green; scapulars lilac; lesser wing coverts and underparts claret brown. In winter: head and neck brown, streaked with white; underparts smoky brown. Bill, legs and feet dark olive brown. Iris dark brown. Wing ♂ 290-306, ♀ 264-277. Tarsus 85-103. Bill ♂ 126-145, ♀ 100-120 (H.).

Breeds.—Spain (Marismas), France (Camargue), Lower Danube, S. Russia (Lower Dniester and Volga), Caucasus, and widely in Asia, N. Africa and also in S.E. United States. Migrates; visits N.W. Europe, including Britain, chiefly in autumn, has occurred north to Iceland. Winters tropical and S. Africa and Asia, and some in Sardinia, Tunisia and Palestine.

COMATIBIS.

Head and upper neck in front naked; head somewhat hammer-shaped; throat feathers long, thin, and lance-like.

Comatibis eremita (L.).

♂ ♀ Plumage bronzy purple and green. Bill, legs, feet, and naked skin on sides of head and throat red, on top of head black. Iris reddish orange. Wing ♂ 403-420, ♀ 390-408. Tarsus 68-72. Bill ♂ 133-147, ♀ 115-131 (H.).

Breeds.—Morocco, Algeria, N.E. Africa and S.W. Asia, formerly bred in Alpine districts of S. Europe. Apparently resident.

THRESKIORNIS.

Entire head and neck bare.

Threskiornis æthiopicus æthiopicus (Latham).

SACRED IBIS.

♂ ♀ Bare head and neck black; plumage snowy white; tips of primaries, inner secondaries and scapulars black. Bill black. Legs and feet dark red. Iris brown. Wing ♂ ♀ 360-400. Tarsus 90-100. Bill 138-170 (H.).

Resident.—Africa south of Sahara, S. Arabia, and Mesopotamia; of occasional occurrence in Egypt.

ARDEIDÆ.

Hérons. Sternum with two incisions on hind margin; outer and mid toes joined by web at base; middle claw pectinated; powder-down patches present on breast and sides of rump.

ARDEA.

Large; never altogether white; bill strong, straight, pointed; occiput crested or with a few long narrow feathers; scapulars long but not to tip of wing; frequent rivers, lakes, sea-shore, etc., feed on fish, frogs, insects; breed in colonies on ground or trees; eggs pale blue-green.

Ardea cinerea cinerea L. COMMON HERON. *Fr.* Héron huppé; *Ger.* Fischreiher; *Ital.* Airone cenerino; *Swed.* Grå Häger.

♂ ♀ General colour grey; crown white, black at sides; central line of throat and chest white with black stripes, sides of abdomen black, centre white; feathers of nape, lower neck, breast and scapulars elongated. Bill brown above, yellow below. Bare space round eye and iris yellow. Legs and feet greenish brown. Wing 445-470. Tarsus 135-152. Bill 109-120.

Breeds.—British Isles; Continental Europe from 64° N. in Norway and 60° in Russia to Mediterranean; Egypt, N.W. Africa, Azores, Madeira and Canaries; also widely in Asia and Africa. Migratory in northern part of its breeding range, birds from N. Europe wintering in Mediterranean Basin and Africa. Resident in Britain.

Ardea purpurea purpurea L. PURPLE HERON. *Fr.* Héron pourpré; *Ger.* Purpurreiher; *Ital.* Airone rosso.

♂ ♀ Above grey, scapulars with cinnamon tips; crown of elongated feathers, line down sides of neck, centre of breast and abdomen black; lower dorsal neck plumes creamy streaked black; sides of breast and abdomen maroon. Bill brownish yellow. Legs and feet dark brown in front, yellowish behind. Iris golden yellow. Wing 340-383. Tarsus 108-135. Bill 123-146. Young: no long plumes on crown, general colour reddish brown or dark buff, crown chestnut; neck and breast striated dark grey, throat white.

Breeds.—Locally in Europe south from Holland, France and Hungary; in S. Russia north to Pinsk Marshes and 48° on Volga; also widely in W. and C. Asia and all Africa, including north. In Europe chiefly migratory; occasionally occurs to north of breeding range, even to S. Sweden, rare wanderer to British Isles.

Ardea melanocephala Vigors and Children.

Grey with no chestnut colour and with crown and back of neck black (grey in young). Wing ♂ ♀ 388-420. Tarsus 133-148. Bill 93-108 (H.).

An African species ; has occurred accidentally in S. Europe and N. Africa.

EGRETTA.

White Herons, with ornamental plumes in breeding season, breeding in colonies in morasses (on platform on reeds or on bushes), or in high trees ; eggs 3-4, pale greenish blue.

Egretta alba alba (L.). GREAT WHITE HERON. *Fr.* Héron aigrette ; *Ger.* Grosser Silberreiher ; *Ital.* Airone bianco maggiore.

♂ ♀ summer. White ; long dorsal plumes drooping over tail ; feathers of neck and breast elongated. Bill black, yellow at base. Facial skin greenish yellow. Legs and feet black in front, yellow behind. Iris yellow. After breeding season dorsal plumes drop off and bill becomes yellow, as it is in young. Wing ♂ 410-465, ♀ 400-450. Tarsus 170-215. Bill ♂ 110-135, ♀ 110-132 (W.).

Breeds.—Hungary, Rumania, Balkan Peninsula, S. Russia (Lower Volga, Ural and Emba), and through Asia to N. China and Japan. Migratory in north of breeding range ; occurs in winter in N. Africa (Algeria to Egypt), India and S. China. Of occasional occurrence in C., N.W. and S.W. Europe, as far as Britain.

Egretta garzetta garzetta (L.). LITTLE EGRET. *Fr.* Héron garzette ; *Ger.* Seidenreiher ; *Ital.* Garzetta.

♂ ♀ White ; in breeding season with two long narrow crest feathers, long dorsal plumes, and a tuft of long feathers on breast ; facial skin slaty blue. Bill and legs black, toes yellow. Iris yellow. Wing 250-310. Tarsus 90-115. Bill 73-92.

Breeds.—Spain, S. France (Camargue), N.W. Africa, Italy (Po Valley and Tuscany), Hungary, Balkan Peninsula, S. Russia to Volga and Ural, Caucasus, and in Asia to China and Japan ; also through Africa. Migratory in Europe. Of occasional occurrence Madeira, Canaries, Azores, British Isles.

ARDEOLA.

Smaller Herons ; tarsus shorter ; plumage not entirely white.

Ardeola ibis ibis (L.). BUFF-BACKED HERON. *Fr.* Héron garde-bœuf ; *Ger.* Kuhreiher ; *Ital.* Airone guarda-buoi.

♂ summer. White ; crown with lengthened feathers, chest and dorsal plumes reddish buff. In winter long dorsal plumes are absent and feathers on crown are shorter, crown is pale buff, chest and back white tinged creamy buff. Bill, orbital skin, legs, feet and irides yellow. Wing ♂ ♀ 247-255. Tarsus 78-85. Bill 54-57. ♀ in summer resembles ♂ ; in winter chest and back are white. Young like winter ♀, legs dark greenish brown.

Breeds.—Spain and Portugal, N.W. Africa, Egypt and through Africa and S.W. Asia. Partly migratory ; many winter S. Spain ; casual in Europe outside breeding range, twice in England.

Ardeola ralloides Scopoli. SQUACCO HERON. *Fr.* Héron crabier ; *Ger.* Rallenreiher ; *Ital.* Sgarza-ciuffeto.

♂ ♀ summer. Wings, lower back, tail and underparts white ; crown (dark striped), neck, breast and lateral dorsal plumes ochreous buff, central dorsal plumes vinous. In autumn dorsal plumes are lost, foreback and scapulars yellowish brown. Bill blackish horn, greenish at base below. Legs and feet in summer yellow, in winter yellowish green. Iris yellow. Wing 205-235. Tarsus 57-64. Bill 58-65. Immature birds have back brown, little or no ochreous colour, neck more streaked, and primaries with brown shafts.

Breeds.—N.W. Africa and S. Spain, Hungary, Rumania, Lower Danube Valley, W. Balkans, S.W. Russia, Volga and Ural districts ; also S.W. Asia and through Africa. Migrates ; occurs on passage in Italy, Sicily, Sardinia, Greece, Madeira and Canaries. Casual in N.W. Europè, including Britain.

NYCTICORAX.

Bill shorter than head, strong and broad ; neck short and thick ; on nape several long white tape-like feathers.

Nycticorax nycticorax nycticorax (L.). NIGHT HERON. *Fr.* Héron bihoreau ; *Ger.* Nachtreiher ; *Ital.* Nitticora.

♂ ♀ Crown, nape, scapulars, and back dark green ; foreneck,

nuchal feathers, eyebrow, and abdomen white ; wings grey tinged brown. Bill black, greenish at base below. Facial skin greenish. Legs and feet yellow. Iris crimson. Wing ♂ 281-305, ♀ 274-290. Tarsus 70-78. Bill 65-76 (H.). Young : brown with tawny streaks and large white or buff spots on wings. Iris brown. Legs and feet greenish yellow.

Breeds.—S. Europe from Spain and Portugal through S. France (Camargue) and Italy to Austria, Hungary, and Balkan Peninsula (not Greece, occasional Holland and Germany) ; S. Russia to about 52° N. east to Volga and Ural ; Caucasus ; also through Asia to Japan and in all Africa to Cape. Migratory in the north ; occurs rarely in N. and N.W. Europe, Canaries, and Azores. Casual in British Isles.

IXOBRYCHUS.

Bill much pointed, serrated near tip and nearly straight ; tail 10 feathers ; no ornamental plumes.

***Ixobrychus minutus minutus* (L.).** LITTLE BITTERN.
Fr. Héron blongios ; *Ger.* Zwergrohrdommel ; *Ital.* Tarabusino.

♂ Creamy buff ; crown, nape, back, quills, and tail black ; wing coverts white more or less washed buff. Bill yellow, ridge above dark brown. Facial skin greenish. Legs and feet green. Iris orange yellow. Wing ♂ ♀ 140-152. Tarsus 45-47. Bill 45-52. ♀ more ochreous ; crown black, back brown or chestnut with faint buff streaks, wing coverts ochreous. In young, crown is chestnut.

Breeds.—Nearly all Europe south of Baltic ; Russia north to about 60°, east to Volga and Ural ; Caucasus, and N. Africa ; also C. and S.W. Asia. Migrates ; occurs in winter in Africa and India and on passage in Switzerland, Sardinia, Dalmatia, and Greece ; rare in Scandinavia and British Isles.

BOTAURUS.

10 tail feathers ; bill pointed, serrated near tip ; more nocturnal than Herons, shy, skulking amongst reeds ; often protect themselves from observation by clinging vertically to a reed-stem.

Botaurus stellaris stellaris (L.). BITTERN. *Fr.* Grand Butor ; *Ger.* Rohrdommel ; *Ital.* Tarabuso ; *Swed.* Röhrdrom.

♂ ♀ Above tawny, marked, freckled, and streaked with dark brown or chestnut ; quills brown, barred chestnut ; beneath dark buff, streaked with reddish brown. Bill greenish yellow, upper ridge brown. Legs and feet pale green, back of tarsus and soles yellow. Facial skin green. Iris yellow. Wing ♂ 320-350, ♀ 300-326. Tarsus 96-102 (H.). Bill 65-75.

Breeds.—England (Norfolk) ; Continental Europe from S. Sweden (rare), Finland (very rare), and N. Russia about 63°, south to Mediterranean ; N.W. Africa, and through temperate Asia to Japan. Migrates ; occasional in winter in Britain, Greece, Macedonia. Winters in Egypt, and Africa to Abyssinia, also India and China.

Botaurus lentiginosus (Montagu). Distinguished from “*stellaris*” by its uniform slaty grey primaries. Wing ♂ 270-305, ♀ 245-270. Tarsus 86-97. Bill 68-80 (W.).

An American species ; has occurred about forty times in Britain, also Iceland, Channel Islands, Canaries, and Azores.

PHŒNICOPTERI.

Legs very long and slender, feet webbed ; bill abruptly bent in middle and lamellated on both mandibles ; only one genus “*Phœnicopterus*” ; gregarious ; nest low platform or mound of mud ; eggs 2, chalky white.

PHŒNICOPTERIDÆ.

Characters as in the Order.

PHŒNICOPTERUS.

Phœnicopterus ruber antiquorum Temminck.
FLAMINGO. *Fr.* Flamant rose ; *Ital.* Fenicottero.

♂ ♀ Rosy white ; quills black, wing coverts and axillaries scarlet. Bill pink with black tip. Facial skin pink. Legs and feet deep pink. Iris yellow. Wing ♂ 360-445, ♀ 350-420. Tarsus ♂ 280-370, ♀ 260-300. Bill 118-132 (H.). Young : neck

brown ; upper parts light brown with dark streaks, wing coverts white with dark brown apical spots ; beneath white with narrow brown shaft streaks, under carpal coverts and axillaries rosy ; white is gradually acquired with age. Bill lead colour. Legs and feet leaden brown. Iris brown.

Breeds.—S. Spain, S. France (Camargue, where some winter), and W. Asia as far as India. Migrates ; found in N.W. Africa at all seasons, not breeding ; Egypt in winter, also Greece, Italy, Sardinia, and Corsica ; elsewhere in Europe rare visitor, very rare Britain.

The typical race "*P. r. ruber*" is American.

ANSERES.

Toes 4 in number, fully webbed always in front 3 ; bill, at tip a horny plate (nail), edges of mandibles with rows of fine lamellæ ; under the feathers a rich covering of down ; eggs unspotted.

ANATIDÆ.

Characters as in Order "Anseres."

CYGNUS.

Neck long, equal to or longer than body ; tarsus short, reticulated, hind toe not lobed.

Cygnus cygnus (L.). WHOOPER SWAN. *Fr.* Cygne sauvage ; *Ger.* Singschwan ; *Ital.* Cigno selvatico ; *Swed.* Sångsvan.

♂ ♀ Entirely white. Bill in front black, base yellow ; yellow extending forward at sides to below middle of nares. Lores yellow. Legs and feet black. Iris brown. Wing ♂ 580-628, ♀ 562-595. Tarsus 112-120. Bill ♂ 101-112, ♀ 94-103 (W.). Young : ashy brown ; bill and legs flesh coloured.

Breeds.—Iceland ; N. Europe, chiefly within Arctic Circle, but in Russia south to about 53° on Volga ; Oesel (Gulf of Riga), and across N. Siberia. Migrates ; some are resident in Iceland ; occurs in winter C. and S. Europe, British Isles, becoming rarer in Mediterranean countries. Has recently nested in Scotland.

Cygnus bewicki bewicki Yarrell. BEWICK'S SWAN.

Ger. Kleiner Singschwan ; *Ital.* Cigno minore.

♂ ♀ White. Smaller than "cygnus." Bill black, basal part yellow, yellow at sides not reaching nostril. Legs and feet black. Iris brown. Wing ♂ 515-537, ♀ 475-525. Tarsus 100-115. Bill ♂ 90-98, ♀ 84-95 (W.). In young, bill is whitish at base, black towards tip ; legs and feet dull yellowish white.

Breeds.—From White Sea, east through Siberia to Lena ; Nova Zembla, Waigatz, and Kolguev. Migrates ; occurs in winter British Isles, W. Europe, and in E. Europe south to Mediterranean and Caspian Seas ; also C. Asia.

Cygnus olor (Gmelin). MUTE SWAN. *Fr.* Cygne domestique ; *Ger.* Höckerschwan ; *Ital.* Cigno reale ; *Swed.* Knötsvan.

♂ ♀ White. Bill orange red, area round nostrils, base and cutting edges black, and black below. At base of upper mandible is a black knob, this frontal tubercle is less developed in ♀ but is noticeable even in young. Legs and feet dark grey. Wing ♂ 560-622, ♀ 535-570. Tarsus 98-120. Bill ♂ from knob 70-85, ♀ from feathers 73-90 (W.). Young are sooty brownish grey ; bill black.

Breeds.—(In wild state) S. Sweden, Denmark, N. Germany, C. and S. Russia, Danube Valley, Bulgaria, Caucasus, Deltas of Volga and Ural, and through Siberia to Mongolia. Migrates ; winters in Mediterranean Basin, N.W. Africa, Egypt (rare) ; and from Caspian districts to N.W. India.

ANSER.

Bill high at base, lamellations strong, visible from outside ; tip of upper mandible occupied by nail ; vegetarian and granivorous, feeding chiefly by night ; gregarious except in breeding season ; nest depression in ground or amongst herbage lined with down.

Anser anser (L.). GREY LAG-GOOSE. *Fr.* Oie cendrée ; *Ger.* Graugans ; *Ital.* Oca selvatica ; *Swed.* Grågås.

♂ ♀ Above brown with pale margins, occasionally some white at base of bill, wing coverts, lower back, and rump grey ; beneath paler brown with some black feathers. Bill pinkish flesh to orange

yellow, nail horny white. Legs and feet flesh colour, claws black. Iris brown. Wing 415-480. Tarsus 73-79. Bill 47-60.

Breeds.—Iceland, N. and W. Scotland, Continental Europe north and east of a line from Denmark through Germany, Austria and Hungary to Rumania and Macedonia (has also bred in Spain and Algeria), Caucasus, and through N. Asia to Kamtschatka. Chiefly migratory. Resident in Scotland, occurs in winter south to Mediterranean (abundant S. Spain) and N.W. Africa, and S.W. Asia to India and China; occasional in Azores and Madeira.

Anser albifrons albifrons (Scopoli). WHITE-FRONTED GOOSE. *Ger.* Blässgans; *Ital.* Oca lombardella; *Swed.* Blåsgås.

♂ ♀ Resemble "*A. anser*" but smaller, and lack grey on wing coverts and rump; a white band on forehead varying in width and not reaching eyes; underparts heavily marked with black (except in extreme youth). Wings long, but barely reaching end of tail. Bill pale flesh, edges of nostrils, a longitudinal streak between them and on rami of lower mandible yellowish, nail white. Legs and feet orange, occasionally pinkish, claws white. Eyelids grey. Wing ♂ 415-450, ♀ 380-405. Tarsus 68-75. Bill 45-51.

Breeds.—Lapland, Finland, Kola and Kanin Peninsulas, Kolguev, Nova Zembla, and through N. Siberia to New Siberian Islands; also Iceland and Greenland. Migratory; occurs in winter in C. and S. Europe (British Isles to Mediterranean), N. Africa, and widely in S. Asia; found on passage in N. Europe, Denmark, Poland, Germany, and C. Russia.

Anser erythropus (L.). LESSER WHITE-FRONTED GOOSE. *Fr.* Oie naine; *Ger.* Zwerggans; *Swed.* Finnmarke Gås.

♂ ♀ Smaller than "*albifrons*," wings reach beyond tail, white on forehead extends above to behind the line of the eyes. Eyelids orange yellow. Bill rosy flesh or rosy red, nail white. Legs and feet orange yellow. Iris dark chestnut. Wing ♂ 367-388, ♀ 352-381. Tarsus 58-62. Bill 28-35 (W.).

Breeds.—Finland, Lapland, Kanin Peninsula, Kolguev, Nova Zembla and across north Coast of Asia. Migrates; winters W. Europe, British Isles to Spain and Italy (rare), also Greece and Egypt and in Asia (India to China and Japan).

Anser fabalis fabalis (Latham). BEAN GOOSE. *Fr.* Oie vulgaire; *Ger.* Saatgans; *Ital.* Oca granaiola; *Swed.* Sädgås.

♂ ♀ Resemble "A. anser" but darker and margins paler, no grey on wing coverts or rump, and no black markings on underparts. Bill black and orange yellow, but very variable, usually upper mandible black at base, with a yellow band below and in front between base and nail, lower mandible yellow, with black along rami and at tip. Nail usually black, but sometimes white or half white, half black. Legs and feet amber to orange yellow, claws black. Iris brown. Wing ♂ 447-473, ♀ 424-452. Tarsus 71-82 (W.). Bill 50-63.

Breeds.—N. Europe from 63° in Norway, Finland, N. Sweden, and N. Russia; Kolguev, Nova Zembla, and in Siberia east to Taimyr Peninsula. Migratory; many winter in Sweden, and occur also through Europe from British Isles to Mediterranean and Black Seas; N.W. Africa and Caucasus; found in Baltic Provinces and Poland only on passage. Occasional Iceland and Greenland; rare visitor Madeira.

Anser brachyrhynchus Baillon. PINK-FOOTED GOOSE. *Ger.* Rotfussgans; *Swed.* Spetsbergen Sädgås.

♂ ♀ Smaller than "A. fabalis," wing coverts, especially greater coverts, grey, and greyer on underparts. Bill shorter, black at base and on nail, remainder rosy pink, this colour extending back under nostrils to gape. Legs and feet pink. Iris dark brown. Wing 400-460. Tarsus 70-77. Bill 44-49.

Breeds.—Spitzbergen, generally on ledges of cliffs, and probably in Franz Joseph Land. Migrates; occurs on passage Bear Island, Nova Zembla, Iceland, W. Norway, Denmark, and in winter British Isles (very rare Ireland), Holland, France, Sweden, Faroes, Hungary (rare), Italy (very rare).

Anser hyperboreus hyperboreus Pallas. SNOW GOOSE.

♂ ♀ Snowy white, primaries black, outer primaries grey towards base; primary coverts grey with black shafts. Bill red, paler below and with black stripes along cutting edge, nail yellowish white. Legs and feet lilac to orange red, claws black. Iris dark brown. Wing 385-440. Tarsus 75-82. Bill 50-60.

Young: ash brown with broad white margins, primaries as in adult. Bill dark brownish grey with black stripes along edges. Legs and feet dark grey.

Breeds.—E. Asia and W. America, in Arctic regions. Migrates to Pacific Coasts of Asia and America in winter, but has occurred in several European countries, British Isles, Germany, Holland, France, Hungary, Norway, and Russia.

A. hyperboreus nivalis (Forster). Larger. Wing 440-445. Tarsus 80-89. Culmen 65-69 (H.). Bill larger, stronger and deeper than in "hyperboreus." ♀ from Solway Firth, 18th February 1921, measured: wing 440; tarsus 86; bill 64.

Breeds.—Greenland, Arctic N.E. America. Has occurred in Ireland and Scotland.

BRANTA.

In closed bill no "teeth" visible on cutting edge of upper mandible.

Branta bernicla bernicla (L.). BRENT GOOSE. *Fr.* Cravant; *Ger.* Ringelgans; *Ital.* Oca colombaccio; *Swed.* Prutgås.

♂ ♀ Above brown; crown, neck (with a white patch on either side) and chest black; beneath whitish grey or smoky brown, flanks barred pale brown and white. Bill, legs and feet black. Iris dark brown. Wing 300-352. Tarsus 54-63. Bill 32-37 (♀ smaller than ♂).

Breeds.—Arctic regions; in Greenland from 70° to 82.30° N., Kolguev, Nova Zembla, Spitzbergen, Franz Joseph Land and in Siberia east to Taimyr Peninsula. Migrates; occurs on passage Jan Mayen, Iceland, Lapland and Faroes; in winter British Isles, Continental Europe, chiefly North Sea Coasts, rarer in Baltic; occasionally to Portugal, Morocco and Egypt.

Branta leucopsis (Bechstein). BARNACLE GOOSE. *Fr.* Barnache nonnette; *Ger.* Weisswangengans; *Ital.* Oca faccia bianca; *Swed.* Hvitkindad Gås.

♂ ♀ Crown, neck, chest, back and rump black; face, throat and underparts white; wing coverts and scapulars grey with

crescentic bars of dark brown and white tips, flanks barred light brown and white. Bill, legs and feet black. Wing 390-425. Tarsus 62-75. Bill 28-33.

Breeds.—Spitzbergen, E. Greenland, on ledges of cliffs. Migrates; occurs on passage Iceland, Scandinavia, Finland, N. Russia, Baltic Provinces and Germany. Winters British Isles, Holland, Belgium, France; rarely to Hungary, Egypt, Spain and Morocco.

Branta ruficollis (Pallas). RED-BREASTED GOOSE. *Ger.* Rothalsgans; *Ital.* Oca collo rosso.

♂ ♀ Upper parts and breast, throat and vertical band on face black; a patch on cheeks (encircled by white) and chest chestnut; fore face, a pectoral band, tips of wing coverts and abdomen white. Bill, legs and feet black. Wing 345-365. Tarsus 52-56. Bill 23-26 (H.).

Breeds.—W. Siberia. Winters abundantly Caspian Basin; occurs on passage Volga Delta and S. Russia, casual in W. Europe. Very rare Britain.

ALOPOCHEN.

“Teeth” of bill weakly developed; nail broad, occupying end of bill; a spur on wing-angle.

Alopochen ægyptiaca (L.). EGYPTIAN GOOSE.

♂ ♀ Above reddish brown, lower neck and upper back yellowish brown with fine darker wavy lines; scapulars grey brown and chestnut; primaries and primary coverts black; secondaries, outer web bronze green, inner web brown; upper wing coverts white, with a black subterminal band on the greater; beneath white, foreneck grey brown, forebreast and flanks yellowish with fine brown vermiculations; in centre of breast a chestnut spot; axillaries white; under wing coverts, inner white, outer black; under tail coverts yellowish. Bill red with dark brown edges. Legs and feet reddish flesh. Wing ♂ 400-430, ♀ 350-385. Tarsus 70 ♀ to 90 ♂. Bill 45-53 (H.).

Resident in Nile Valley, Palestine (Dead Sea) and C. and S. Africa. Accidental in Europe and British Isles (? escaped birds).

TADORNA.

Bill concave, nail narrow, sharply bent down and recurved over tip of mandible; old ♂ in breeding season with knob at base of bill; horn knob at bend of wing; breed in burrows.

Tadorna tadorna (L.). SHELDRAKE. *Fr.* Canard tadorne; *Ger.* Brandente; *Ital.* Volpoca; *Swed.* Grafand.

♂ Head, neck, and speculum green; chest, wing coverts, back, and underparts white; scapulars black, fore part of body chestnut; red knob on bill. ♀ lacks knob on bill and generally duller plumaged. Bill red in spring, paler later, nail dusky. Legs and feet flesh colour. Wing ♂ 300-350, ♀ 280-295. Tarsus ♂ 51-58, ♀ 46-53. Bill ♂ 49-50, ♀ 42-44. Young: above smoky brown; face, neck, and rump white; underparts white; chestnut begins to appear in October.

Breeds.—British Isles; N. Europe from 69° in Norway and Russian Lapland to France, Germany, Hungary, Rumania, Bulgaria, and S. Russia; and east to Central Asia; also occasionally Spain and Algeria. Migrates, but resident in British Isles; occurs in winter south to Mediterranean and N. Africa, N. India, China, and Japan.

CASARCA.

Much like "Tadorna." Bill less concave; nail wider and not recurved.

Casarca casarca (L.). RUDDY SHELDRAKE. *Ger.* Rostente; *Ital.* Casarca.

♂ Orange brown with black neck ring; wing coverts and axillaries white; speculum coppery green; rump, upper tail coverts, and tail black. Bill, legs and feet black. ♀ Paler, whiter on head, and without neck ring. Wing ♂ 350-399, ♀ 327-357. Tarsus 55-65. Bill ♂ 42-50, ♀ 36-47 (W.).

Breeds.—Balkan Peninsula, Greece, Rumania, Crimea, lakes of S. Russia up to Volga Valley, Caucasus, and through S.W. and C. Asia to China; also has bred Algeria and probably S. Spain. Occurs in winter N. Africa, India, and S. China. Casual visitor to N. and W. Europe; rare wanderer to Britain.

ANAS.

Bill nearly straight, wide, height at base less than length from feathers to tip; hind toe not lobed, but with only a narrow membrane; nest on ground, occasionally in old nest in a tree; gregarious in winter and frequenting coasts and lakes; in summer males pass through an "eclipse" state of plumage resembling female plumage but retaining the brighter speculum and traces at least of other male characteristics.

Anas boschas boschas L. MALLARD. *Fr.* Canard sauvage; *Ger.* Stockente; *Ital.* Germano reale; *Swed.* Gräsand.

♂ Head and neck green, collar white; back vermiculated brown and white; scapulars vermiculated grey and white; speculum purple between black and white bars; breast chestnut, remainder underparts vermiculated grey and white; four central tail feathers recurved. ♀ Brown with pale margins, central tail feathers not recurved. Bill ♂ greenish yellow, top and tip blackish; ♀ greenish olive, top and tip dark horn. Legs and feet orange red. Iris brown. Wing ♂ 260-285, ♀ 240-260. Tarsus 42-45. Bill 52-58.

Breeds.—British Isles, Faroes, Azores; Continental Europe, Corsica, Sardinia; and widely in Asia and N. America; N.W. Africa (Morocco to Tunis). Partly migratory; occurs in winter Canaries, N. Africa, India, China, and Japan, and in America south to Panama.

Note.—A slightly different form "*A. boschas conboschas*" Brehm, occurs in Greenland, and is greyer above with black spots on chest and coarser vermiculations on underparts; while in Iceland there is a more doubtful form, "*A. boschas subboschas*" Brehm; this has the black spots in a lesser degree in the adult male. These spots only seem to occur in "*A. boschas boschas*" when passing into and out of eclipse plumage.

Anas crecca crecca L. TEAL. *Fr.* Sarcelle sarcelline; *Ger.* Krickente; *Ital.* Alzarola; *Swed.* Krickan.

♂ Above grey, vermiculated black and white, head and neck chestnut, face and neck stripe green, margined cream; outer scapulars striped black and white or buff; tips of greater coverts cinnamon; speculum green and black margined above rufous and

white; beneath whitish, often rusty, with drop-like spots on breast, under tail coverts black and straw yellow. Bill dark slate grey. Legs and feet greenish grey. Wing ♂ 173-189, ♀ 166-186. Tarsus ♂ 30-32, ♀ 28-31. Bill ♂ 34-38, ♀ 33-36. ♀ Brown with pale margins, speculum as in ♂. Bill dark horn, yellowish at base below. Legs and feet slaty brown.

Breeds.—Iceland, British Isles, Continental Europe south to France, N. Italy, Hungary, Herzegovina, Bosnia, Bulgaria, and S. Russia; and widely in N. Asia. Migrates; occurs in winter in N. and C. Europe where open water remains, and south over Mediterranean Basin and N. and C. Africa; also S. Asia to China.

A. crecca carolinensis Gmelin. American Green-winged Teal. ♂ Resembles "crecca" but has no cream line above green on face, scapulars not striped; on each side of breast a white crescentic patch. Bill ♂ black, ♀ brownish. Legs and feet light flesh. ♀ plumage as in ♀ "crecca."

An American race; has occurred three times in British Isles.

Anas querquedula L. GARGANEY. *Fr.* Sarcelle d'été; *Ger.* Knäkente; *Ital.* Mazzaiola; *Swed.* Ärtä.

♂ Brown, with rufous margins; crown dark brown, a white line eye to nape; scapulars long, narrow, streaked black, white and grey; face and throat pinkish chestnut with white spots; breast tawny with dark bars, abdomen white; flanks vermiculated black and white; wing coverts blue grey; speculum green between white lines. ♀ resembles ♀ "crecca" but speculum as in ♂, with less green gloss and wing coverts blue grey. Bill ♂ black, ♀ greenish grey, brownish on top. Legs and feet plumbeous. Wing ♂ 187-198, ♀ 175-194. Tarsus 26-30. Bill ♂ 36-40, ♀ 34-39 (W.).

Breeds.—Iceland (occasional), England (local), Europe from S.W. Norway, Sweden, and N. Russia, south to France, Italy, Bosnia, Greece, and Black Sea, becoming rarer to south; also across N. Asia. Migrates; occurs in winter in N. and tropical Africa, Arabia and S. Asia to China.

Anas discors L. BLUE-WINGED TEAL.

Like "A. querquedula" but ♂ has a long crescentic patch of white in front of eye and both sexes have blue wing coverts.

Wing ♂ 180-196, ♀ 175-192. Tarsus 28-31. Bill ♂ 38-44, ♀ 38-40 (W.).

An American species; has occurred a few times in W. Europe, twice or thrice in British Isles.

Anas strepera L. GADWALL. *Fr.* Chipeau bruyant; *Ger.* Schnatterente; *Ital.* Canapiglia; *Swed.* Snatterand.

♂ Above brown, vermiculated white; crown and nape reddish; median wing coverts chestnut, greater wing coverts black; speculum white; breast blackish with white scale-like bars; abdomen white. ♀ Brown with buff margins, wing as in ♂ but chestnut on wing coverts less in extent. Bill ♂ leaden grey, ♀ dusky, dull orange on sides. Legs and feet dull orange. Wing ♂ 255-280, ♀ 245-270. Tarsus 36-41. Bill 36-47.

Breeds.—Iceland (not common), Great Britain, S. Sweden and Russia from about 57° N., through Denmark, Holland, France (rare), Germany, Poland, Hungary, Rumania, Bulgaria to Black Sea; also in Asia and N. America. Partly migratory. Resident in Britain. Occurs in winter in Mediterranean Basin, and N. Africa, India and China, and in America south to Mexico and Florida.

✓ **Anas penelope** L. WIGEON. *Fr.* Canard siffleur; *Ger.* Pfeifente; *Ital.* Fischione; *Swed.* Blåsand.

♂ Above grey and white, vermiculated; head (with few green feathers behind eye) and neck chestnut; forecrown yellowish buff; wing coverts and underparts white; axillaries grey; speculum green between dark purple bars; chest vinous. ♀ variable; brown with reddish margins, head and neck spotted, wing coverts edged white; speculum blackish grey, sometimes almost as bright green as in ♂. Bill greyish blue with black tip in ♂, duller in ♀. Legs and feet greenish grey. Wing ♂ 253-290, ♀ 235-260. Tarsus ♂ 37-41, ♀ 36-39. Bill 32-36.

Breeds.—N. Europe and Asia; in Europe from Norway to Finmark, in Russia south to about 53° and in Urals to Orenburg, Iceland, Scotland, and south of Baltic in E. Prussia and Mecklenburg. Migratory; abundant Britain in winter, and through C. and S. Europe to Mediterranean, N.W. Africa and Egypt, Azores and Madeira; also C. and S. Asia.

Anas americana Gmelin. AMERICAN WIGEON.

♂ Upper parts vinous and dark grey, vermiculated; head and neck white spotted; stripe from eye to nape green; speculum purplish green; axillaries white at all seasons and ages. ♀ as in ♀ "penelope" but forecrown white. Bill ♂ light grey blue, tip black. Legs and feet light bluish. Measurements as in "penelope."

An American species; has occurred rarely in W. Europe (Britain, France, Azores).

Anas acuta acuta L. PINTAIL. *Fr.* Pilet; *Ger.* Speisente; *Ital.* Codone; *Swed.* Stjertand.

♂ Above grey and white, vermiculated; head brown, scapulars black; greater wing coverts grey brown tipped cinnamon, speculum bronzy green with white tip and black subterminal bar; neck stripe and underparts white, two central tail feathers long and tapering. ♀ Brown, barred dull white or rufous; speculum indicated by two white bars (rarely greenish tinge); bars on tail oblique or V-shaped, central tail feathers only slightly elongated. Bill long, narrow, ♂ plumbeous blue, nail, base and top of culmen black, ♀ bluish horn. Legs and feet ♂ greyish, ♀ greenish grey. Wing ♂ 260-278, ♀ 240-260. Tarsus ♂ 41-44, ♀ 38-43. Bill ♂ 48-53, ♀ 44-49.

Breeds.—Iceland, Scotland, Norway, Sweden, Lapland, Finland, Denmark, Germany, greater part of N. and C. Russia, and across N. Asia; an isolated instance in S. Spain. Migratory; winters in British Isles and Europe from S. Norway to Mediterranean and N. Africa south to about 10° N., also S. Asia.

Anas angustirostris Ménétries. MARBLED DUCK.

♂ Above light brown with marbled appearance, darker on scapulars, more ashy on primaries; neck feathers lengthened; beneath dull white, face and throat spotted, chest and flanks barred brown. Bill very narrow, blue grey, top and tip black. Legs and feet greenish olive. Wing 203-215. Tarsus 35-37. Bill 44-46. ♀ like ♂ but neck feathers not lengthened. Wing 195-207.

Resident.—S. Spain, N.W. Africa (Morocco to Tunis), Egypt, Cyprus, Syria, on Volga north to Sarepta, Caucasus and S.W. Asia. Some migrate; occurs N.W. India in winter and irregularly on passage in S.E. Europe; casual in Canaries and Madeira, and has been met with in Cape Verde Islands.

SPATULA.

Bill longer than head, very flat in front and much widened ; lamellæ very fine.

Spatula clypeata (L.). SHOVELER. *Fr.* Souchet ; *Ger.* Löffelente ; *Ital.* Mestolone ; *Swed.* Skedand.

♂ Head and neck green, back brown, wing coverts grey blue, lower series with white tips, scapulars white, speculum green, breast white, abdomen chestnut. ♀ Above brown with pale or rufous margins ; beneath deep buff spotted. Bill ♂ leaden black, ♀ greenish brown above, dull orange below. Legs and feet orange red. Iris ♂ orange, ♀ yellow. Young : brown. Wing ♂ 227-253, ♀ 216-235. Tarsus 34-38. Bill ♂ 62-65, ♀ 58-62.

Breeds.—From Arctic Circle in Scandinavia, Lapland, and N. Russia south to British Isles, Denmark, Holland, France, N. Austria, Hungary, and Bulgaria, in Russia south to Perm ; also across Asia and North America ; has bred in S. Spain, Tunisia and Cyprus. Migrates ; occurs in winter in Mediterranean Basin, Egypt, tropical Africa and S. Asia to China and Japan ; in America south to W. Indies and C. America.

NETTA.

Hind toe lobed, as in all Diving Ducks ; bill narrower in front than behind, edge of feathering on sides of bill forming almost a straight line ; tail 16 feathers.

Netta rufina (Pallas). RED-CRESTED POCHARD. *Ger.* Kolbenente ; *Ital.* Fistione turco.

♂ Crown (crested) and nape yellowish cinnamon, lower face and throat vinous chestnut ; back and scapulars brown, latter with white bases ; carpal edge of wing, speculum, under wing coverts and flanks white ; hind neck and breast black, abdomen brown. Bill vermilion red. Legs and feet orange red. Iris reddish brown. ♀ Light brown, paler beneath, crest smaller, speculum greyish white with dark tips. Bill reddish brown. Legs and feet pinkish. Iris hazel. Wing ♂ 256-278, ♀ 249-269. Tarsus 40-43. Bill ♂ 48-52, ♀ 44-50 (W.).

Breeds.—Germany (local and occasional), France (Camargue), Lake of Constance (where it also winters), Balearic Islands, E. Spain, Sardinia, Sicily, Macedonia, Dobrudscha, S. Russia north to Ufa, Caucasus and in W. Asia; also in Algeria. Winters in Mediterranean Basin, chiefly east of Sardinia; Egypt; and W. Asia to N.W. India. Of accidental occurrence in N. and N.W. Europe, rare wanderer to British Isles.

NYROCA.

Hind toe lobed; tail 14 feathers; bill behind tip as wide as at base; feather edge at base of bill forms a convex line.

Nyroca ferina ferina (L.). POCHARD. *Fr.* Milouin; *Ger.* Tafelente; *Ital.* Moriglione; *Swed.* Brunand.

♂ Above grey and brown vermiculated; head and neck chestnut; throat whitish; forepart of body black; secondaries grey; no metallic speculum; abdomen grey freckled brown. Bill longer than head, black with blue band. Legs and feet dull grey. Iris yellow. ♀ Browner above, head and neck reddish brown, secondaries grey, beneath whitish freckled dusky on throat and darker on abdomen. Bill duller than in ♂. Legs and feet light greenish grey. Iris brown. Wing ♂ 210-225, ♀ 200-210. Tarsus 37-39. Bill 45-49.

Breeds.—British Isles (rare in Ireland), S. Sweden, Lapland, Finland, N. Russia between 55° and 60°, Baltic Provinces, Poland, Germany, France, Hungary, Rumania, and also across Siberia. Partly migratory; occurs in winter throughout temperate Europe to Mediterranean, Egypt, N.W. Africa and S. Asia. Rare visitor to Iceland, Faroes, Azores, Madeira and Canaries.

Nyroca nyroca nyroca (Güldenstädt). WHITE-EYED DUCK. *Ger.* Moorente; *Ital.* Moretta tabaccata.

♂ Head, neck and breast chestnut; above black with green gloss; speculum white with black tips; primaries partially white with brown tips, some with white on both webs; beneath, chin and lower breast white, abdomen brown, under tail coverts white. Bill blue slate above, brown below. Legs and feet dull grey. Iris white. ♂ Above duller, browner, less green gloss, less chestnut on head. Bill duller. Legs and feet greenish grey.

Iris brown. Wing ♂ 174-192, ♀ 176-185. Tarsus 29-31. Bill ♂ 40-43, ♀ 36-40 (W.).

Breeds.—N.W. Africa, S. Europe from Spain and Portugal through S. France (Camargue), Italy, Sicily, Montenegro, Bulgaria, Danube mouth, Hungary, E. Germany and Poland to S. Russia, north to about 55°; a few in Holland; also in W. Asia to N.W. India. Occurs in winter in Mediterranean Basin, Egypt, and Africa south to tropics, also S. Asia. Rare visitor to Britain, Denmark and Baltic Provinces.

Nyroca fuligula (L.). TUFTED DUCK. *Fr.* Morillon; *Ger.* Reiherente; *Ital.* Moretta; *Swed.* Vigg.

♂ Above black with greenish tinge, head with a tuft glossed purple; wings dull oily green, speculum white tipped black; upper breast black, lower breast and abdomen white (in some mottled brown). Bill slaty blue, nail black. Legs and feet plumbeous. Iris golden yellow. Wing ♂ 197-206, ♀ 192-202. Tarsus 35-38. Bill 37-40. ♀ Brown with slight green gloss, base of bill white and white spot on chin, breast and abdomen with white tips, under tail coverts mottled white; tuft on head brown black, shorter than in ♂. Bill slate grey, nail black. Legs and feet light greenish grey.

Breeds.—Iceland (rare), Faroes, British Isles, N. Europe south to Holland in west, about 50° in Germany and 48° in Russia, also Rumania and N. Balkan Peninsula and widely in N. Asia. Partly migratory; occurs in winter in C. and S. Europe, Mediterranean Islands, N.W. Africa, Egypt, and in E. Africa south to Uganda, also S. Asia.

Nyroca marila marila (L.). SCAUP DUCK. *Fr.* Canard milouinan; *Ger.* Bergente; *Ital.* Moretta grigia; *Swed.* Bergand.

♂ Head and upper neck dark green, fore part of body black, breast and abdomen white, scapulars and back vermiculated black and white; secondaries oily green, speculum white. ♀ Above brown, with some white vermiculations; secondaries glossed green; head and neck reddish brown, fore part of face and chin white, throat and breast reddish brown with white tips, lower breast white, abdomen brown mottled white. Bill, legs and feet lead blue in ♂, duller in ♀. Iris golden yellow. Wing ♂ 215-237, ♀ 208-225. Tarsus 38-41. Bill ♂ 43-47, ♀ 43-44.

Breeds.—Iceland, Kolguev, Faroes, Scotland, Norway, Sweden, Finland, many Baltic Islands, Russia south to Petrograd and Novgorod; also in Siberia. Migrates; occurs in winter over Europe south of Baltic to Mediterranean, Black and Caspian Seas; and S.W. Asia. Common at that season on British Coasts.

BUCEPHALA.

Bill shorter than head and narrower at tip than at base; tail rounded, 16 feathers.

***Bucephala clangula clangula* (L.).** GOLDEN-EYE. *Fr.* Garrot; *Ger.* Schellente; *Ital.* Quattr'occhi; *Swed.* Knipa.

♂ Above black, head and neck green (purple in some lights), feathers of hind crown slightly elongated; an oval white patch on lores; scapulars black striped with white; wing coverts, secondaries and underparts white. Bill bluish black. Legs and feet orange. Iris yellow. ♀ Above brown, with grey tips, head and neck amber, crown feathers less elongated; inner secondaries white; chest band grey, underparts white. Bill bluish black, with yellow spot round nail which is 5 m.m. wide. Legs and feet brownish yellow. Wing ♂ 212-228, ♀ 192-200. Tarsus ♂ 34-38, ♀ 33-35. Bill ♂ 34-36, ♀ 28-32.

Breeds.—Scandinavia south to about 60°, Finland north to tree limit, Iceland (occasional), N. Russia south to Moscow and Ufa, Baltic Provinces, N. Germany; and across Siberia. Migrates; occurs in winter British Isles and C. and S. Europe south to Mediterranean (occasional in N.W. Africa) and through S. Asia to China and Japan.

***Bucephala islandica* (Gmelin).**

♂ Larger than "clangula"; head and neck bluish purple, feathers of hind crown longer, loreal patch crescent-shaped, scapulars black, bifurcated and with white drop-shaped centres. Bill bluish black. Legs and feet orange. ♀ resembles ♀ "clangula" but yellow spot on bill larger and nail wider 7 m.m. Wing ♂ 240-248, ♀ 213-224. Bill ♂ 33-36, ♀ about 30.

Breeds.—Iceland (resident); also Greenland and N. America. Rare visitor to European shores; has occurred Norway, Faroes, Belgium, Spain, Finland, Rügen Islands and possibly Shetlands.

Bucephala albeola (L.). BUFFEL-HEADED DUCK.

♂ Above black, glossed green and purple on head; a large white patch beginning below eye runs round occiput to form a half ring; lower neck, greater and middle wing coverts, outer scapulars, speculum, and underparts white; tail grey; feathers of hind crown more elongated than in "islandica" and feathers on sides of head also lengthened. Bill dark lead colour. Legs and feet yellowish pink. ♀ Above dark brown; white patch beginning below eye extends to behind ear-coverts; band on wing white; beneath white tinged ashy grey on flanks. Bill dusky. Legs and feet pinkish. Wing ♂ 163-180, ♀ 150-163. Tarsus 30-33. Bill ♂ 25-29, ♀ 23-26 (W.).

A North American species, which has occurred three times in Britain.

CLANGULA.

Bill shorter than head and shorter than tarsus; nail occupies whole tip of bill; tail feathers pointed, 14 in number and in ♂ much elongated.

Clangula hyemalis (L.). LONG-TAILED DUCK. *Fr.* Canard de miclon; *Ger.* Eisente; *Ital.* Moretta codona; *Swed.* Alfogel.

♂ summer. Crown and upper parts rich brown, lores grey, above and behind eye a white stripe; scapulars with chestnut margins; breast brown, abdomen white; central tail feathers dark brown, next white and brown, lateral feathers white. In winter, head, neck, lower breast and abdomen white, neck patches, upper parts and upper breast deep brown, lores and sides of head brownish grey, scapulars pale grey. Bill basal half and nail black, remainder rosy orange. Legs and feet bluish grey. Iris carmine. ♀ summer. Upper parts brown; a line behind the eye, centre of throat and foreneck pale brown; underparts white. In winter; above brown with chestnut margins; crown, neck patches and chin brown; face, line behind eye, collar and underparts white, chest band pale reddish brown. Bill greyish black. Legs and feet greenish grey. Speculum brown in all plumages. Wing ♂ 220-233, ♀ 198-215. Tarsus 33-36. Bill ♂ 25-29, ♀ 25-28.

Breeds.—Circumpolar ; Spitzbergen, Jan Mayen, Nova Zembla, Waigatz, Kolguev, Iceland, Faroes, Shetland and Orkney Islands (doubtful), Norway south to about 60°, Sweden, Lapland, N. Russia south to L. Onega, and across Arctic Asia and America to Greenland. Migrates ; occurs Finland and C. Russia on passage ; occurs in winter British Isles, C. Europe south to S. France, N. Italy, Danube mouth and Caspian Sea ; in America south to Central United States and California ; in Asia to China and Japan.

OIDEMIA.

Bill broad, swollen at base in adult ♂ and flattening gradually towards point. Eggs brownish.

Oidemia nigra nigra (L.). COMMON SCOTER. *Fr.* Macreuse ; *Ger.* Trauerente ; *Ital.* Orchetto marino ; *Swed.* Sjöorre.

♂ Black ; tail 16 feathers ; 1st primary very short, about half length of coverts, 2nd shorter than 3rd and emarginate on inner web from about the middle. Bill with tubercle bluish black, on upper part a large yellow patch which includes the nostrils and reaches to about 10 m.m. from tip. Legs and feet dark slaty brown. ♀ Brown, sides of head pale brown or whitish. Bill dull black. Wing ♂ 223-235, ♀ 220-229. Tarsus 41-45. Bill 40-45.

Breeds.—Spitzbergen (few), Iceland, Scotland and Ireland (small numbers), N. Europe from C. and N. Norway and Sweden, east to N. Russia ; Waigatz, Nova Zembla ; and in Siberia east to Taimyr Peninsula. Migrates ; in winter common on North Sea and British Coasts, less so in Baltic ; also passes through C. Europe to Black and Caspian Seas, Hungary, Rumania, N. Italy and W. Europe south to Spain and W. Morocco ; rare in Madeira, Canary Islands, Azores.

Oidemia fusca fusca (L.). VELVET SCOTER. *Fr.* Grande Macreuse ; *Ger.* Sammetente ; *Ital.* Orco marino ; *Swed.* Svärta.

♂ Black, with a white patch under eye, and white bar across wing ; tail 14 feathers ; 1st primary short, more than half length of coverts, 2nd longest and not emarginate on inner web, 3rd usually a little shorter. Bill orange yellow, base and tubercle black, nail flesh colour. Legs and feet red, webs dusky

black. Iris white. ♀ Brown, with a dull white patch before and behind eye, frontal feathers terminating square; wing with a white bar. Bill dusky slate. Legs dull red. Iris brown. Wing ♂ 265-288, ♀ 260-273. Tarsus 45-50. Bill ♂ 44-46, ♀ 40-46.

Breeds.—Norway to Finmark, Finland, Lapland, Sweden, Öland, Gothland, N. Russia south to Pinsk Marshes and Simbirsk Govt., Nova Zembla, Kolguev, Waigatz; and in Siberia east to Yenisei. Wanders south in autumn and winter; occurs on passage in C. Russia, and in winter British Isles and Continental Europe from 64° in Norway to Spain, Italy, Black Sea, Asia Minor and S. Caspian; not common in Mediterranean, rare N.W. Africa; occasional in Faroes, rare in Greenland.

Oidemia perspicillata (L.). SURF SCOTER.

♂ Black; a patch on crown and one on nape white; tail 14 feathers; 1st primary about $\frac{2}{3}$ length of coverts; 2nd primary slightly emarginate on inner web and about equal to third. Iris white. Bill orange red above, base swollen and black, nail yellow, below flesh coloured. Legs and feet pinkish red, webs black. ♀ resembles ♀ "fusca" but without wing bar; behind ear coverts and on lores dull white spots, frontal feathers terminate in a point. Bill greenish black. Legs and feet orange, webs blackish. Iris as in ♂. Wing ♂ 240-256, ♀ 223-235. Tarsus 40-43. Bill ♂ 34-37, ♀ 35-38 (W.).

Breeds.—Arctic N. America from Alaska to Hudson Bay and Greenland (Disco). Occurs occasionally in N.W. Europe from Lapland and Finland to France. Casual in British Isles.

HISTRIONICUS.

Bill much shorter than head or tarsus, narrow, tapering to tip; nail occupying tip and extending far back, border ill-defined; tail 14 feathers, graduated and pointed.

Histrionicus histrionicus histrionicus (L.). HARLEQUIN DUCK. *Fr.* Canard histron; *Ger.* Kragenente; *Ital.* Moretta arlecchino; *Swed.* Strömand.

♂ Slaty blue; patch on lores, spot on ear coverts, patch on neck, and narrow collar white; cinnamon streak from forehead

over eye to nape; flanks chestnut. Bill plumbeous grey, nail paler. Legs and feet pale bluish. Iris reddish brown. ♀ Brown, mottled white on underparts, patches on face and behind ear coverts white. Bill duller than in ♂. Legs and feet dull plumbeous. Iris brown. Wing ♂ 195-204, ♀ 190-197. Tarsus 36-38. Bill ♂ 26-29, ♀ 24-26.

Breeds.—Iceland, Greenland, and north-east N. America. Rare visitor to Europe; has occurred in Britain, Faroes, Scandinavia, N. Russia, Germany, France, Switzerland and N. Italy.

POLYSTICTA.

Bill longer than tarsus; tail 14 feathers; plumage like Eider Ducks. Sexes different.

Polysticta stelleri (Pallas). STELLER'S EIDER.

♂ Head and wing coverts white; throat, collar, back, rump, and upper tail coverts blue black; forehead and occipital tuft sea green; beneath, reddish buff, shading to dark brown on abdomen; secondaries (inner curved) and narrow pointed scapulars blue with inner webs white. Bill bluish, tip white. Legs and feet blue grey, webs dark grey. ♀ Dark brown with rufous margins, more chestnut on breast, abdomen dusky, tips of greater wing coverts white, speculum blue. Bill dusky blue. Legs and feet dusky olive. Wing ♂ ♀ 209-217. Tarsus 34-37. Bill 36-40 (W.).

Breeds.—Arctic Siberia, east of Taimyr Peninsula, Alaska, and Arctic America, doubtful in Europe (Varanger Fiord, Ribachi Peninsula, and Murman Coast). Occurs in winter in small numbers Norway, Sweden, Finland, N. Russia; occasional Denmark, Prussian Coast; rare Britain, France, Italy.

SOMATERIA.

Bill almost straight, about as long as head, high at base; frontal feathers terminate in three acute angles, lateral angles reach a point nearly in middle of bill; tail 14-16 feathers. Sexes different; frequent sea-coasts.

Somateria mollissima mollissima (L.). EIDER. *Fr.* Eider; *Ger.* Eiderente; *Swed.* Ejder.

♂ White; crown, rump, and tail coverts, lower breast and

abdomen black ; breast pale pink ; line on crown, nape, and sides of head sea green ; inner secondaries and scapulars curved ; of feathers on bill, central angle shortest, lateral angles reach below nostrils. Bill olive green, nail greenish yellow. Legs and feet greenish brown, webs black. ♀ In summer, dark brown, barred and with rufous tips to feathers ; in winter more chestnut. Bill dusky green, nail bluish. Wing ♂ 270-315, ♀ 255-295. Tarsus ♂ 46-53, ♀ 44-51. Bill from central angle ♂ 45-62, ♀ 44-50.

Breeds.—Kolguev, Waigatz, N. Russian Coast, Iceland, Scotland, Northumberland Coast, Ireland (Donegal), Coasts of Norway, Sweden, Baltic Provinces, Bornholm, W. Frisian Islands, rare Denmark and Brittany, doubtful E. Greenland. Visits in winter Baltic Coasts and Coasts of North Sea, N. and N.W. France ; occasional inland in Germany, Austria, rarely Italy, S. France ; rare visitor to Azores.

Birds from N. Europe (Norway to Russian Lapland) have been separated as "*norvegica*" (forehead steeper, in ♂ frontal angles more pointed, ♀ less brilliant) but the distinction is doubtful.

S. mollissima farøensis Brehm. Smaller, especially the bill. Wing ♂ 269 (H.).

Breeds.—Faroe Islands.

S. mollissima borealis (Brehm).

♂ Bill smaller than in "*mollissima*" and in spring bright orange yellow ; curved inner secondaries somewhat longer.

Breeds.—Spitzbergen, Bear Island, Greenland, and N. American Coast south to Hudson Bay and Ungava.

Somateria spectabilis (L.). KING EIDER. *Ger.* Prachteiderente ; *Swed.* Prakt-ejder.

♂ Frontal angles, infra-orbital spot, chevron on throat, wings, inner secondaries, scapulars (curved), rump, abdomen, and under tail coverts black ; crown and nape blue grey ; face and sides of neck sea green ; foreneck, back, and upper tail coverts white ; breast creamy buff ; frontal angles at sides of bill fall far short of nostrils, central angle longest. Bill red, frontal shield, legs and feet orange red. ♀ distinguished from

♀ “mollissima” by feathering on bill ; bill also somewhat redder ; plumage in winter deeper chestnut. Wing ♂ 272-292, ♀ 245-282. Tarsus 43-47. Bill 30-36.

Breeds.—Spitzbergen, Kolguev, Nova Zembla, Waigatz, Siberian and Arctic American Coasts, Greenland ; occurs at all seasons, non-breeding, Bear Island, Jan Mayen, Iceland ; in winter rare or occasional on N. and W. European Coasts from N. Russia to Britain, France, Italy.

OXYURA.

Tarsus short, feet large ; tail feathers 18, stiff and pointed ; bill swollen at base, concave above in middle ; frequent inland waters ; eggs rough shelled.

Oxyura leucocephala (Scopoli). WHITE-HEADED DUCK.
Ger. Ruderente ; *Ital.* Gobbo rugginoso.

♂ Above buffy brown, freckled rufous ; upper tail coverts chestnut ; head and chin white ; centre of crown, throat and collar black ; beneath brown, buff tipped, glossy chestnut on breast. Bill blue. Legs and feet grey brown, webs black. ♀ Head brown, infra-ocular stripe and throat white freckled brown, no black collar. Wing ♂ 158-165, ♀ 150-160. Tarsus 34-36. Bill 44-46.

Breeds.—Spain, N.W. Africa, Lower Egypt, Corsica, Sardinia, S. Italy, Sicily, Hungary (local, rare), Germany (rare), Transylvania, Lower Danube, Black Sea, S. Russia north to 50° ; Asia Minor, Palestine, and in W. Asia. Partly migratory ; occurs Persia and Baluchistan in winter ; rare in Central and W. Europe.

MERGUS

Bill long, narrow, with saw-like sharp teeth in both mandibles ; frequent shores and inland waters ; nest in hollow trees or on ground under rocks ; eggs pale cream or greenish grey ; feed on fish caught by diving.

Mergus merganser merganser L. GOOSANDER. *Fr.* Grand Harle ; *Ger.* Gänsesäger ; *Ital.* Smergo maggiore ; *Swed.* Storskrake.

♂ Head (crested) and neck green ; upper back black, lower

back to tail grey ; secondaries, wing coverts, lower neck and underparts white with salmon tinge ; tail feathers 18. Bill vermilion, nail and ridge of upper mandible blackish. Legs and feet yellowish red, webs lighter. ♀ Above slaty grey, crown (crested) brown, upper neck and sides of head chestnut. Bill dull red. Legs and feet duller than in ♂. Wing ♂ 272-290, ♀ 255-262. Tarsus ♂ 50-53, ♀ 45-46. Bill ♂ 55-63, ♀ 48-52.

Breeds.—Iceland, Faroes (rare), Norway, Sweden, Lapland, Finland, Russia south to Baltic Provinces and C. Volga, N. Germany, Denmark (few), Scotland, Switzerland (local), Dobrudscha (occasional), also in N. Asia. Partly migratory ; occurs in winter south to Spain and Morocco in west ; occasional Algeria and Egypt ; numerous north Coast Mediterranean, Black and Caspian Seas ; also Palestine, Persian Gulf, and further east in Asia.

Mergus serrator L. RED-BREASTED MERGANSER. *Fr.* Harle huppé ; *Ger.* Mittlerersäger ; *Ital.* Smergo minore ; *Swed.* Småskrake.

♂ Crown (crested) and neck greenish black, collar white, back and scapulars black ; rump and flanks vermiculated black and white ; wing coverts and secondaries white ; underparts white, chest reddish buff mottled brown, patch on sides of breast with large white oval spots ; tail feathers 18. Iris reddish yellow to light red. Bill carmine, ridge above and nail black. Legs and feet light red. ♀ Crown and crest reddish brown, sides of head and the neck more chestnut ; upper parts grey brown, greater coverts and outer secondaries white ; underparts white. Bill, legs, feet, and iris duller than in ♂. Wing ♂ 238-257, ♀ 218-236. Tarsus ♂ 43-48, ♀ 40-45. Bill ♂ 57-63, ♀ 52-58.

Breeds.—Circumpolar ; in Europe, in Iceland, Norway, Sweden, Denmark, Lapland, Finland, Russia south to Baltic Provinces, 50° on Volga and N. Ufa, Caucasus, N. Germany, Switzerland (local), Faroes, Scotland, Ireland ; also in N. Asia and N. America. Occurs in winter in British Isles, and Continental Europe from Holland to Poland south to Mediterranean ; Azores, Madeira, Tunisia, Egypt (doubtful), Palestine and S. Asia to Japan ; also America to California and W. Indies.

Mergus albellus L. SMEW. *Fr.* Petit Harle huppé ; *Ger.* Zwergsäiger ; *Ital.* Pesciajola ; *Swed.* Salskrake.

♂ White ; foreface, occipital chevron enclosing crest, back, two lines advancing on to breast, secondaries and greater wing coverts black ; flanks vermiculated ; tail 16 feathers. Iris bluish white. Bill bluish, nail whitish. Legs and feet plumbeous, webs blackish. ♀ Much smaller ; above dark grey, crown and nape chestnut ; beneath white, grey on chest. Iris dark brown. Bill, legs and feet slightly greener than in ♂. Wing ♂ 192-205, ♀ 178-186. Tarsus 30-32. Bill ♂ 28-30, ♀ 25-28 (W.).

Breeds.—N. Sweden, Lapland, N. Finland, Russia south of tundras south to Lake Onega, Kama River, Orenburg, and Ufa ; Dobrudscha ; and in Siberia east to Kamtschatka. Occurs in winter on W. European Coasts south to Mediterranean, and through C. and S. Europe on lakes and rivers, N.W. Africa (occasional), N. Mediterranean Coasts, Black and Caspian Seas, Asia Minor, and in S. Asia to Japan. Rare visitor to Palestine and Egypt.

Mergus cucullatus L. HOODED MERGANSER.

♂ Above black ; head and neck black, crest laterally compressed, white with black tips ; median wing coverts dove grey ; beneath white, two black bars on sides of breast, flanks chestnut vinous ; tail 18 feathers. Bill black. Legs and feet yellow brown. Iris yellow. ♀ Above brown, beneath white ; head and neck brown, crest redder, white on wing confined to outer webs of secondaries. Bill black, edges orange. Iris brown. Legs and feet dusky red. Wing ♂ 192-200, ♀ 184-198. Tarsus 30-31. Bill ♂ 40-42, ♀ 35-39.

A North American species. Has occurred four times in British Isles (Wales and Ireland).

STEGANOPODES.

Feet webbed ; all 4 toes united by membrane.

PHALACROCORACIDÆ.

Bill and neck long ; body feathering close with under covering of down ; tail rounded, 12-14 feathers ; nostrils closed in adults.

PHALACROCORAX.

Bill straight, compressed sideways, hooked at point; tarsus short, compressed sideways, not feathered; frequent sea and inland waters; feed on fish caught by diving; nest on rocks or trees and generally in colonies; eggs bluish white with chalky crust.

Phalacrocorax carbo carbo (L.). CORMORANT. *Fr.* Grand cormoran; *Ger.* Kormoran; *Swed.* Storskarf.

♂ ♀ Above bronzy green, with purple margins; head, neck and underparts purplish black; chin and hair-like feathers on head and neck (January to May) and patch on thighs (January to July) white; throat-pouch yellow; tail 14 feathers. Iris green. Bill above brown, below yellowish white with brown tip. Legs and feet black. Wing 340-370. Tarsus 63-70. Bill 62-72. Full plumage attained in second summer. Young: dark brown, with slight bronze tinge; beneath white with pale brown markings, flanks dark brown.

Breeds.—Coasts of Norway to Kola Peninsula, Iceland, Faroes, British Isles; Greenland to Labrador. Chiefly resident; a few wander south in winter.

P. carbo subcormoranus (Brehm). Smaller. Bill more slender; purple less intense and of a greener shade. Wing 330-356 (H.).

Breeds.—Continental Europe from Baltic to N. Spain, Balearic Islands, C. and S. Italy, Sardinia, Sicily, Hungary and Rumania; and through S. Russia to Central Asia. In winter occurs in Greece, Egypt, Tunisia, Algeria, and on the Caspian Sea.

P. carbo maroccanus Hartert. Upper parts as in "carbo," beneath differs in throat and fore neck (latter with black tips) being white.

Resident.—W. Coast of Morocco.

Phalacrocorax graculus graculus (L.). SHAG. *Fr.* Cormoran largup; *Ger.* Krähenscharbe; *Swed.* Toppskarf; *Ital.* Marangone.

♂ ♀ Dark oily green with a bronzy tinge, upper parts with dark margins to feathers, bluish on head (which is crested Jan. to May); bare skin of chin black with yellow spots; tail 12 feathers.

Bill black, yellow at base below. Legs and feet including webs black. Iris green. Wing 260-282. Tarsus 58-62. Bill 57-63. Young: above brown tinged green; beneath light to whitish brown, throat white. Full plumage is attained in fourth year.

Resident.—Coasts of Norway to Finmark, Russian Lapland, Iceland, Faroes, British Isles, W. France, W. Spain and W. Portugal. In winter occurs on E. Coast of North Sea.

P. graculus desmaresti (Payraudeau). Bill longer and more slender, crest smaller or almost absent; webs yellow, in very old birds brown. Wing ♂ 270-280, ♀ 245-256. Bill 66-71 (H.).

Resident.—Mediterranean Coasts of France and Spain, Italy, Corsica, Sardinia, Adriatic, Greece, Asia Minor and Cyprus. Rare on Algerian and N. Moroccan Coasts.

The status of the Shag breeding on W. Coast of Morocco is still doubtful.

Phalacrocorax pygmæus (Pallas). **PIGMY CORMORANT**. *Ger.* Zwergscharbe; *Ital.* Marangone minore.

♂ ♀ summer. Glossy greenish black with long white spots; middle of back, scapulars, wing coverts and inner secondaries grey with dark margins; head reddish brown. Bill, skin round eye and on throat, legs, and feet black. After the breeding season throat is white, breast reddish, and white spots are absent. Wing 200-207. Tarsus 36. Bill 28-31 (H.).

Breeds.—Hungary, Balkan Peninsula, Black Sea, Lower Volga, Egypt, Algeria (L. Fetzara), and in S.W. Asia. Partly migratory; occurs in winter in Greece, Palestine, Egypt and N.W. Africa. Has occurred occasionally in Europe outside its breeding range and Greece, *e.g.* Russia, Germany, Poland, Switzerland and Italy.

PELECANIDÆ.

Characters as in genus "Pelecanus."

PELECANUS.

Bill peculiar, lower mandible much wider than upper and with a large pouch; frequent lakes, rivers, coasts; feed on fish; nest on small islands or platform of reeds in lagoons or lakes; eggs 2-3, chalky white.

Pelecanus onocrotalus onocrotalus L. ROSEATE PELICAN. *Fr.* Pelican blanc ; *Ger.* Pelikan ; *Ital.* Pellicano.

♂ ♀ White (rosy tinged in fresh plumage); short nuchal crest (in breeding season) and tuft on chest yellowish; primaries black, shafts white. Iris red. Bill bluish grey with pink lines, throat-pouch yellow, face and sides of frontal protuberance yellowish. Feathers of forehead end in a point at base of culmen. Legs and feet pink. Wing ♂ 700-730, ♀ 640-680. Tarsus 130-140. Bill ♂ 430-450, ♀ 290-400 (H.). Young: chocolate brown; in first summer white, spangled brown.

Breeds.—Lower Danube, Dobrudscha, Black and Caspian Seas, Sea of Azov; also in W. Asia, and possibly in E. African lakes. Occurs on Croatian littoral on passage, and in winter in Macedonia, Greece, Egypt, and Africa south to Zambesi and S.W. Asia to India. Has occurred casually in central Europe to E. Prussia and also in Spain, Algeria, and Scandinavia; much more frequently in Austria and regularly in Hungary.

Pelecanus crispus Bruch. DALMATIAN PELICAN.

♂ ♀ Above greyish white, soft feathers on neck forming a mane; primaries black with black shafts; beneath dull white with a patch of yellow feathers on breast; feathers on forehead terminate in a concave line at base of bill. Iris greyish. Bill blue grey with red markings at side, pouch yellow; bare space round eye flesh coloured. Legs and feet leaden grey. Wing ♂ 720-800, ♀ 680-720. Tarsus 116-122. Bill ♂ 400-450, ♀ 360-380 (H.).

Breeds.—Rumania (on Danube and Delta), N. Bulgaria, Montenegro, Albania, Greece, Sea of Azov, Volga Delta and E. Russia to Ufa and Kazan; also W. and C. Asia. Of occasional occurrence in spring in Hungary; winters in Egypt and S.W. Asia to India. Rare visitor Germany, Italy, Sicily, Spain.

SULIDÆ.

Bill straight, long and pointed; no gular pouch; oceanic, feeding on fish caught by plunging; nesting in colonies on cliffs and islands; eggs white with rough chalky covering.

SULA.

Tail 12 feathers.

Sula bassana bassana (L.). GANNET. *Fr.* Fou de Bassan ; *Ger.* Bass Fölpel ; *Ital.* Sula ; *Swed.* Hafsula.

♂ ♀ White ; crown and nape buff ; primaries black ; on top of toes a row of plates, continued up tarsus in three rows with reticulations between. Iris yellowish white. Naked skin round eye, eyelid, and centre of chin pale blue. Bill livid blue with dark slate lines. Legs and feet greyish black, back of toes and front of tarsus greenish. Wing 465-500. Tarsus 55-57. Bill 90-97. Young : first year, above dark brown with white spots ; beneath buff mottled greyish brown ; the white plumage is gradually assumed and complete adult dress attained in fourth year.

Breeds.—Scottish Coasts (several colonies), Ireland (one colony), Wales (one colony), Faroes, Iceland, and in America in Gulf of St Lawrence and off S. Newfoundland. In winter ranges south to Canary Islands, Azores, Madeira, and W. Coast of Africa, occasional in Mediterranean, rare in Baltic Sea ; on American Coast south to Gulf of Mexico.

TUBINARES.

Oceanic birds with a superficial resemblance to Gulls ; feet webbed ; nostrils external and tubular ; bill hooked ; rarely go ashore except to breed ; nest in burrows, crevices of cliffs, or under stones or rocks ; single egg, white, sometimes with faint reddish spots in a zone near large end ; young hatched blind and covered with down ; food, small crustaceans, fishes, etc.

PROCELLARIIDÆ.

Nostrils united above culmen ; 2nd primary longest.

THALASSIDROMA.

Small ; plumage black with white at base of tail ; nares in a single tube and separated by membrane ; tarsus slightly longer than middle toe and claw ; 1st phalanx of middle toe shorter than the two others combined.

Thalassidroma pelagica (L.). STORMY PETREL. *Fr.* Thalassidrome tempête; *Ger.* Sturmschwalbe; *Ital.* Uccello delle tempeste; *Swed.* Stormsvala.

♂ ♀ Above sooty black, rump black; upper tail coverts (tipped black), base of tail and sides of under tail coverts white; underparts smoky brown; tail square. Bill, legs and feet black. Wing 116-124. Tarsus 22-24. Bill 10-11.

Breeds.—Iceland (Westmann Islands), Faroes, Norwegian Coast, Scotland (Islands of north and west and once Bass Rock), S. Wales, Scilly Islands, N. and W. Ireland, Brittany, S.E. Spain (Mar Menor), S. France, Corsica, Sardinia, Sicily, Malta, possibly Crete, Madeira (rare). Occurs in winter in E. Atlantic, south to W. Africa; also Baltic and Adriatic Seas; rare in Mediterranean east of Malta. Has been reported from Red Sea, and also east coast of N. America.

OCEANITES.

Tarsus longer than in "Thalassidroma"; 1st phalanx of middle toe as long as next two combined.

Oceanites oceanicus (Kuhl). WILSON'S PETREL.

♂ ♀ Resemble "T. pelagica" but larger, and upper tail coverts uniform white. Bill, legs and feet black; basal two thirds of web between toes yellow. Wing 140-158. Tarsus 32-35. Bill 12.

Breeds.—Antarctic regions, north to S. Georgia and Kerguelen Land. At other times found in almost all seas. Rare visitor to W. European Coast, Canary Islands, Madeira.

OCEANODROMA.

Tarsus less than middle toe with claw; tail forked.

Oceanodroma leucorhoa leucorhoa (Vieillot). LEACH'S FORK-TAILED PETREL.

♂ ♀ Sooty brown, tinged above with slate, lateral upper tail coverts white, some with grey tips. Bill, legs and feet black. Wing 153-161. Tarsus 24-26. Bill 14-15.

Breeds.—Iceland (Westmann Islands), Hebrides and Isles of Mayo and Kerry; also east coast N. America northwards

from Maine and in N. Pacific on Aleutian, Kurile and Copper Islands. Wanders to other seas; occasionally visits Coasts of Baltic and North Seas, France, Spain, Portugal and W. Mediterranean; also W. African Coast south to Sierra Leone and Liberia; Azores, Canaries, and Madeira. Has been reported from St Paul's Rocks in Mid Atlantic near the Equator and on the American Coast south to Cape San Roque in Brazil, and in Pacific from N. Japan.

Oceanodroma castro (Harcourt). MADEIRAN FORK-TAILED PETREL.

Smaller than "leucorrhoa," blacker; tail less forked, white at base; upper tail coverts white with black tips. Wing ♂ 150-162, ♀ 147-159. Tarsus 21-23.5. Bill 13.5-16 (W.).

Breeds.—Desertas and Porto Santo (Madeira group), Salvage Islands, Azores (Rombos), Cape de Verde Islands and St Helena, also in Pacific. Rare visitor to Coasts of Britain, France, Canary Islands, and coasts of N. America. Birds breeding in Hawaiian Islands and Galapagos Islands have been separated as distinct subspecies, but their status is still doubtful.

PELAGODROMA.

Tarsus and toes very long and tarsus very little longer than middle toe; tail forked (10-14 m.m. deep).

Pelagodroma marina hypoleuca (Webb, Berthelot and Moquin-Tandon).

♂ ♀ Above greyish brown, rump and upper tail coverts paler; forehead, eyebrow and underparts white; pre-ocular patch and ear coverts blackish grey, basal part of inner web of primaries, under wing coverts and axillaries white. Bill, legs and feet black, web between toes yellow with black border. Wing 153-175 (H.). Tarsus 43-44. Bill 16.

Breeds.—Salvage Islands and Cape de Verde Islands. Occurs occasionally on Coasts of Canary Islands, Madeira and Azores; rare on British and N. American Coasts.

The typical form "*P. marina marina*" occurs in S. Seas.

PUFFINIDÆ.

Nostrils united or nearly so above culmen; 1st primary longer or not shorter than 2nd.

PUFFINUS.

Medium size; tarsus laterally compressed, sharp-edged in front; nostrils in a common tube, ending obliquely in front, so that open nares are visible from above, and partition easily seen; 12 tail feathers.

Puffinus puffinus puffinus (Brunnich). MANX SHEARWATER. *Ger.* Sturmtaucher; *Swed.* Mindre lira.

♂ ♀ Above dark slaty brown; beneath white; axillaries white with generally grey subterminal bar, under tail coverts white with traces of grey. Bill above blackish brown, below bluish horn. Front of tarsus, inner and middle toes pale rose, back of tarsus and outer toe black, web of toes light bluish grey. Wing 228-246. Tarsus 44-45. Bill 32-38.

Breeds.—Iceland (Westmann Islands), Faroes, British Isles (Shetlands, Orkneys, Hebrides, Coasts Wales and Ireland, Scilly Islands), France, Desertas and Porto Santo (Madeira), Salvages? Canary Islands? Azores? In winter occurs on Baltic and N. Sea Coasts, also Atlantic Coast N. America.

P. puffinus yelkouan (Acerbi). Levantine Shearwater. *Ital.* Berta minore. Browner above, under tail coverts grey brown mixed with white; axillaries white with brown tips.

Breeds.—Mediterranean from Sardinia, Malta and Tunisia to Bosphorus, Syrian and Egyptian Coasts. Not yet known to have occurred outside these limits.

P. puffinus mauretanicus Lowe. Above browner than "yelkouan"; also browner on flanks, axillaries, vent and under tail coverts; rest of underparts usually tinged with brown.

Breeds.—Western Mediterranean (limits not yet known definitely). Occurs casually E. Atlantic and North Sea.

Birds obtained in Britain, formerly considered "yelkouan," belong to this race.

***Puffinus assimilis godmani* Allen.**

♂ ♀ Above slaty brown; cheeks and underparts white; sides of neck with grey subterminal bars; under tail coverts white, with some brown at sides; axillaries white; under wing coverts greyish white. Bill black above and at tip, slate colour at sides and below. Legs and feet slaty blue, outer toe and outer side of tarsus black. Wing 175-184 (H.). Tarsus 35-38. Bill 24-27.

Breeds.—Madeira (Desertas and Porto Santo); Salvage Islands, Canary Islands, Azores. Rare visitor to British Coasts.

The typical form "*P. a. assimilis*" is Australian.

P. assimilis boydi Matthews. Differs from "*godmani*" through under tail coverts being uniform grey brown.

Breeds.—Cape de Verde Islands. Has occurred once on English Coasts.

***Puffinus gravis* (O'Reilly). GREAT SHEARWATER.**

♂ ♀ Above dark brown with paler tips except on head, which is darker; tips of long upper tail coverts white; beneath white, a patch on abdomen and under tail coverts grey brown, axillaries white with brown tips. Bill yellowish green. Inner side of tarsus and inner toes yellowish, outer side of tarsus and outer toe brown. Wing 320-330. Tarsus 58-60. Bill 45-46 (H.).

Breeds.—Tristan d'Acunha Group. Occurs in N. Atlantic in our summer, from Canaries and Madeira on the east and Newfoundland on west, north to Iceland, Faroes and Greenland. Frequent on British Coasts, especially West.

***Puffinus kuhli kuhli* (Boie). *Ital.* Berta maggiore.**

♂ ♀ Above grey brown; beneath white; sides of neck mottled with pale grey bars; primaries white at base on inner web and white extends beyond coverts, the outer row dark brown. Bill yellowish horn, with black tip. Legs and feet pale reddish flesh, outer side of outer toe and webs brownish. Wing 335-365 (H.). Tarsus 50-58. Bill 45-53.

Resident in Mediterranean from Gibraltar to Asia Minor, Adriatic and Bosphorus. Rare on N. Egyptian Coast. Has occurred once in England.

P. kuhli borealis Cory. Bill larger, thicker, higher and somewhat longer ; white on bases of inner webs of primaries not extending beyond coverts. Bill 53-59.

Breeds.—Azores, Madeira, Desertas, Porto Santo, Salvage Islands, Canary Islands. Occasional visitor to Portuguese and N. American Coasts. Possibly breeds on Berlengas off W. Coast of Portugal. Has occurred once in England.

Puffinus griseus (Gmelin). SOOTY SHEARWATER.

♂ ♀ Brown throughout, under wing coverts greyish white with brown shafts, axillaries brown. Bill dull black with narrow white line at base above. Inner side of legs and two inner toes reddish blue, outer side of legs and outer toe black. Wing 293-320. Tarsus 55-60. Bill 42-45 (H.).

Breeds.—Stephen Island, Stewart Island, and Snares Islands off New Zealand ; has also been reported as breeding in Pescadores Islands off Formosan Coast. Occurs in our summer in N. Atlantic, on the European side from Iceland and Scandinavia south to Portugal, fairly often being seen on British Coasts ; and on the American side from Gulf of St Lawrence to S. Carolina. Has occurred widely in S. Seas and also in N. Pacific.

PTERODROMA.

Tarsus rounded in front ; nares as in “Puffinus” but separated by a very fine partition ; bill shorter and comparatively higher ; 12 tail feathers.

Pterodroma mollis *feæ* (Salvadori).

♂ ♀ Above ashy grey, browner on rump, forehead and lores white tipped grey ; a black patch in front of and beneath eye ; beneath white, sides of breast grey, under tail coverts white. Bill black. Legs and bases of inner and middle toes with their web pale flesh, outer toe and ends of other toes with outer web black. Wing 250-273. Tarsus 31-34. Bill 25-29 (H.).

Breeds.—Madeira, Desertas, Porto Santo, and in Cape de Verde Islands.

The typical form “P. m. mollis” is a S. Atlantic bird, with a greyish band on upper breast.

BULWERIA.

Tail wedge-shaped, 12 feathers; nasal tubes fleshy at the end, openings separate and directed forwards and upwards.

Bulweria bulweri bulweri (Jardine and Selby).

♂ ♀ Sooty brown throughout, greyish on chin, throat, and greater wing coverts. Bill black. Legs and feet greyish, except outer toe, which is black like webs. Wing 198-207. Tarsus 27-29 (H.). Bill 22.

Breeds.—Madeira, Desertas, Porto Santo, Salvage Islands, Canary Islands, Azores, and in several places in N. Pacific Ocean. Is a rare visitor to W. European Coasts; obtained five times in England and once on Greenland Coast.

FULMARUS.

Tail 14 feathers; bill strong, broad; nasal tube high more than $\frac{1}{3}$ length of bill; at base of bill below, a triangular naked patch.

Fulmarus glacialis glacialis (L.). FULMAR. *Ger.* Eissturmvogel; *Swed.* Stormfågel.

♂ ♀ Appearance Gull-like. Above bluish grey, head, neck, and underparts white. Bill at base above greyish green, remainder yellowish, nasal tube olive green. Legs and feet greyish flesh. Wing 320-342. Tarsus 50-55. Bill 35-43.

Breeds.—Franz Joseph Land, Spitzbergen, Jan Mayen, Bear Island, Greenland and Arctic America, Iceland, Faroes, N. Coast of Ireland, Coasts and Islands of Scotland, Yorkshire Coast. Occurs outside breeding season in N. Atlantic and off W. Coast of Europe.

Dimorphic forms occur, of various shades of bluish grey, both above and below. These predominate in Arctic Ocean, from 74° N. and in Greenland and Arctic America, becoming rare in more southern latitudes, but occasionally occur on Scottish Coasts.

PYGOPODES.

Divers and Grebes. Tail very short; toes lobed or webbed, outer toe longest, hind toe on higher level than the others; tarsus strongly compressed sideways, sharp edged in front and behind; legs set very far back on body.

PODICIPIDÆ.

Characters as in genus "Podiceps."

PODICEPS.

Plumage soft and silky, tail feathers soft and difficult to tell from surrounding feathers; toes lobed and united at base by web. Divers; feeding on fish, frogs, insects, etc.; nest large, of aquatic plants and usually floating among reeds; eggs white, soon much nest-stained, inner layer of shell green.

Podiceps cristatus cristatus (L.). GREAT CRESTED GREBE. *Fr.* Grèbe huppé; *Ger.* Grosser Steissfuss; *Ital.* Svasso maggiore; *Swed.* Skägg-Dopping.

♂ ♀ summer. Above dark brown; carpal coverts, secondaries, and some scapulars as well as underparts white; crown and occipital tufts black; lores, supercilium, face, and throat white; ear coverts and tippet cinnamon merging into black. In winter: above brown, lores white, underparts white. Iris red with inner yellow ring. Bill dark brown, reddish along sides and at base below. Legs and feet greenish externally, greenish yellow on inner side. Wing 168-195. Tarsus 55-63. Bill 40-47.

Breeds.—British Isles; Continental Europe from S. Sweden, S. Finland, and Russia south of L. Onega, south to Mediterranean, Black Sea, and Caucasus; Sicily, Egypt, Algeria, and Morocco; and widely in Asia. Northern birds migrate, but many winter in Britain. Chief winter quarters are the Mediterranean Basin and S. Asia.

Podiceps griseigena griseigena (Boddaert). RED-NECKED GREBE. *Fr.* Grèbe jou-gris; *Ger.* Rothalsiger Steissfuss; *Ital.* Svasso dal collo rosso; *Swed.* Grästrupig-Dopping.

♂ ♀ summer. Crown and hind neck black, on each side of occiput a short tuft; upper parts black with brown edges; foreneck and chest chestnut; secondaries white; lores black, line below eye white; throat lavender grey, remainder underparts white. In winter: upper parts and foreneck brown; beneath white; lores brown and no white line below eye. Bill black, yellow at base above and below. Legs and feet black, lobes of toes above buffish, below black. Iris red. Wing 155-185. Tarsus 53-56. Bill 35-45.

Breeds.—Sweden north to 65°, S. Finland, N. Russia to Kola Peninsula and Archangel, and south through Europe to Caucasus, Black Sea and Dobrudscha in the east, in the west to Denmark, Holland and Germany and through Austria and Hungary to Danube; also in W. Siberia. Migratory; occurs in winter in Mediterranean and N. Africa (Egypt to Morocco); also British Isles, Belgium and France. Rare visitor to Norway; has occurred Iceland and Spitzbergen.

The East Asiatic and American race "*P. griseigena holbœllii*" Reinhardt (a larger bird, wing 185-208, bill 46-54) has occurred once in Iceland.

Podiceps auritus (L.). SCLAVONIAN GREBE. *Fr.* Grèbe cornu; *Ger.* Ohrensteissfuss; *Ital.* Svasso cornuto; *Swed.* Svarthake-Dopping.

♂ ♀ summer. Above dark brown; crown, throat and tippet black; lores red brown; from eye to nape a chestnut band, hinder feathers of which are prolonged into tufts; foreneck chestnut; beneath white, flanks chestnut; secondaries white. Bill straight, black, tip and base above bluish, base below red. Legs and feet dull greyish black. Iris red. Wing 135-150. Tarsus 44-50. Bill 21-24. In winter: crown down to eye, hind neck and upper parts dark brown tinged greenish; underparts white, foreneck pale grey, a nearly complete collar white.

Breeds.—Norway north to 64°, Finmark, Sweden, Russia north to 65°, east to Urals and Orenburg and south to about

50° N. ; Baltic Provinces, Denmark, Iceland (abundant), Faroes (few), N. Scotland (very local); also widely in Asia and N. America. Migratory ; occurs in winter and on passage in Europe south to Mediterranean ; has occurred Azores ; in Asia ranges south to 24° N., and in America to S. California and Florida.

Podiceps nigricollis nigricollis Brehm. BLACK-NECKED GREBE. *Ger.* Schwarzhals Steissfuss ; *Ital.* Svasso piccolo ; *Swed.* Svarthalsad-Dopping.

♂ ♀ summer. Head, neck and upper parts black ; beneath white, flanks chestnut ; behind eye a tuft of cinnamon feathers ; secondaries and inner webs of inner primaries white. Bill slightly upturned, black, reddish at base. Legs and feet outer side black, inner side pale greenish blue. Iris red with narrow white inner ring. In winter : crown, face, ear coverts, neck and upper parts brown. Wing 120-130. Tarsus 42-45. Bill 19-24.

Breeds.—Livonia, Germany, Austria, Hungary, Denmark, Rumania, Sicily, Spain, Morocco, N. Algeria, Russia south from about 55° N. ; and widely through Asia and Africa. Migratory ; occurs in winter in British Isles (where a few pairs have bred), and generally throughout S. Europe and S. Asia ; rare visitor to Canaries, Madeira, and Azores.

Podiceps fluviatilis fluviatilis (Tunstall). LITTLE GREBE. *Fr.* Castagneux ; *Ger.* Zwergsteissfuss ; *Ital.* Tuffetto ; *Swed.* Små-Dopping.

♂ ♀ summer. Above brownish black, green tinged, especially on crown ; beneath white mottled with brown, throat dark brown, sides of head, ear coverts and foreneck chestnut. In winter : above brown, beneath white, foreneck and flanks pale reddish brown. Bill black, yellowish at base. Legs and feet dull greenish grey. Iris red brown. Wing 97-105. Tarsus 34-38. Bill 18-22.

Breeds.—British Isles ; Continental Europe from S. Sweden, Livonia and Courland south to Mediterranean ; in Russia from about 60° N. south to Crimea and Astrakhan ; also Sicily, Sardinia and N.W. Africa, and in S.W. Asia. Partly migratory ; does not appear to go farther south than N. Africa.

COLYMBIDÆ.

Divers; toes united by web; plumage harder than in Grebes; tail short but visible; bill long and pointed; oceanic in winter, breed on inland lakes; food, fish obtained by diving; eggs generally 2, placed near water's edge, olivaceous brown or green blotched with blackish brown.

COLYMBUS.

Characters as above.

Colymbus immer Brünnich. GREAT NORTHERN DIVER.

Fr. Plongeon imbrin; *Ger.* Eis-Seetaucher; *Ital.* Strolaga maggiore; *Swed.* Islom.

♂ ♀ summer. Above black spotted with white, on scapulars barred; head, throat and hind neck purplish black, foreneck green; a collar of white and black streaks and a row of same on throat; underparts white, flanks black with white spots. Bill, ridge of upper mandible slightly curved downwards, keel of lower mandible slightly upcurved, black, whitish at tip. Outer side of legs and outer toe black, inner side of legs and inner toes pale grey blue, webs dark brown, paler in middle. Iris dark red. In winter: brown above with grey margins, beneath white. Young like adults in winter. Wing 330-390. Tarsus 80-97. Bill 75-90. Tail 18 or 20 feathers.

Breeds.—Iceland, Jan Mayen, Greenland north to 70° and across N. America. Seen in most seasons but not breeding in Norway, Kanin Peninsula and Faroes. In winter, ranges south to British Isles and Coasts of W. Europe, Azores, Madeira; very rare in Baltic and Black Seas; occasional in Mediterranean; in America ranges south to Lower California and Florida.

Colymbus adamsi Gray. WHITE-BILLED NORTHERN DIVER.

♂ ♀ Resemble "C. immer" but ridge of upper mandible straight and keel of lower mandible much curved upwards; bill larger and straighter, whitish yellow; white spots and bars on back are larger; tail 18 feathers. Wing 370-400. Bill 80-95 (H.).

Breeds.—Nova Zembla, Arctic Siberia and western N. America. Occurs in winter on Coasts N. Russia and N. and W. Norway; rare visitor to British Isles, Finland and Sweden; has occurred on Caspian Sea and in Italy. On American Pacific Coast ranges south to S. Alaska and also occurs in Japan.

Colymbus arcticus arcticus L. BLACK-THROATED DIVER. *Fr.* Plongeon à gorge noire; *Ger.* Polartaucher; *Ital.* Strolaga mezzana; *Swed.* Stor-lom.

♂ ♀ summer. Above black or deep brown, barred with white, wings spotted; head, throat and hind neck grey; beneath white, foreneck purplish black, sides of neck and breast streaked black and white. In winter much as in "immer" but smaller. Iris light chestnut. Bill bluish black. Outer side of legs and outer toe blackish, inner side of legs and inner toes reddish flesh, webs whitish. Wing ♂ 330-342, ♀ 305-320 (Zedlitz). Tarsus 73-83. Bill 55-67.

Breeds.—Norway to Finmark, Sweden, Lapland, N. Finland, Nova Zembla, Waigatz, Kolguev, Russia south to Moscow and Smolensk, Baltic Provinces, N.E. Germany (rare), N. Scotland. In winter occurs on Coasts S. and W. Norway, Denmark, Britain, Holland, France, and rarely Spain and Portugal; occasional in Mediterranean, Italy, Rumania and Greece, and on lakes of S. Russia and in Black Sea.

C. arcticus suschkini (Sarudny). Head and hind neck lighter than in "arcticus"; bill weaker and shorter. Wing 291-337 (H.).

Breeds.—Govts. of Perm and Ufa in E. Russia, and in Siberia. Occurs on Caspian Sea in winter.

Colymbus stellatus Pontoppidan. RED-THROATED DIVER. *Fr.* Plongeon catmarin; *Ger.* Nord-Seetaucher; *Ital.* Strolaga minore; *Swed.* Smålom.

♂ ♀ summer. Above brown with small white spots, head and sides of throat grey; hind neck and sides of breast brown with white streaks; throat patch chestnut; underparts white. In winter entire throat and foreneck white, and head and hind neck are freckled with white. Bill horn black. Legs and feet on outer side greenish black, inner toes and inner side of legs yellowish white, webs pale flesh. Iris chestnut brown. Wing 280-305. Tarsus 68-75. Bill 47-53.

Breeds.—N. Europe from Norway to Russia; in Russia south to Perm; Nova Zembla, Spitzbergen, Jan Mayen, Bear Island, Iceland, Faroes, N. and W. Scotland, Ireland (local); and across N. Asia and N. America. In winter many move south and occur over Europe to Caspian and Black Seas and Mediterranean; occasional in Algeria, rare in Egypt; in Asia south to China and in America to California, Maine, and Florida.

COLUMBÆ.

Bill thinnest in middle, expanding towards tip, base covered with soft skin; food, seeds, beechmast, etc.; nests open on branches, or in holes in ground or trees, or on rocks or buildings; eggs white or yellowish white, generally 2, sometimes only 1.

COLUMBIDÆ.

Tarsus shorter than middle toe and claw.

COLUMBA.

Tail 12 feathers; upper part tarsus feathered in front.

Columba livia livia Gmelin. ROCK-DOVE. *Fr.* Colombe biset; *Ger.* Felsentaube; *Ital.* Piccione selvatico; *Swed.* Klippdufva.

♂ ♀ Blue grey, paler on back and wings, rump white; throat, neck and chest metallic green or purple; two black bars on wing. Iris orange red. Bill brownish black, whitish at base above. Legs and feet red. Wing 215-230. Tarsus 27-30. Bill 17-19.

Resident.—Faroes, Coasts of British Isles, especially Scotland and Islands; Mediterranean Countries and Islands; Crimea, Ural Mountains; N.W. Africa; also S.W. Asia.

C. livia canariensis Bannerman. Underparts darker grey than in "livia" and rump greyish white; somewhat smaller. Wing 207-227 (H.).

Resident.—Canary Islands.

C. livia schimperi Bonaparte. Grey of back, wings and underparts much paler than in "livia"; rump white tinged grey. Smaller. Wing 184-210 (H.).

Resident.—Egypt and Nubia.

Columba œnas œnas L. STOCK-DOVE. *Fr.* Colomb; *Ger.* Hohltaube; *Ital.* Columbella; *Swed.* Skogsdufva.

♂ ♀ Slaty grey; neck (except fore part) metallic green or purple, chest vinous; some black spots on wing coverts and secondaries; tail blue grey at base, towards the tip a narrow pale grey bar, with a dark terminal bar. Iris dark brown. Bill red, yellowish towards tip and greyish white at base above. Legs and feet pale red. Wing ♂ 215-227, ♀ 210-216. Tarsus 26-27. Bill 17-18.

Breeds.—British Isles; Continental Europe south from S. Scandinavia, S. Finland, and Russia about 60° N. to Mediterranean, Black Sea, and Caucasus; in Russia east to Urals; N.W. Africa; also in W. Asia. Northern birds migrate; becomes more abundant in N. Mediterranean Countries and N.W. Africa in winter; also in Egypt. Resident in British Isles.

Columba palumbus palumbus L. RING-DOVE. *Fr.* Colombe ramier; *Ger.* Ringeltaube; *Ital.* Colombaccio; *Swed.* Ring-dufva.

♂ ♀ Head, throat, lower back, rump, and upper tail coverts bluish slate; sides of neck metallic green or lilac with patch of creamy white; back and scapulars greyish brown, outer wing coverts white, breast vinous, tail black with broad bar of light grey. Iris pale yellow. Bill red, yellow towards tip, base above whitish. Legs and feet coral red. Wing 235-253. Tarsus 27-32. Bill 20-21.

Breeds.—British Isles; Continental Europe generally from about 64° to the Mediterranean; and also W. Asia. Northern birds migrate.

C. palumbus excelsa Bonaparte. White neck patches larger. Wing 254-270 (H.).

Resident.—Forests of Morocco, Algeria, Tunisia. The status of this form is very doubtful.

C. palumbus maderensis Tschusi. Grey parts darker, back and scapulars darker and browner. Wing 242-246 (H.).

Resident.—Madeira.

C. palumbus azorica Hartert. Above darker than "maderensis," deep slate on head, rump, and upper tail coverts, vinous of breast deeper. Wing 233-250 (H.).

Resident.—E. and C. Azores.

Columba trocaz Heineken.

♂ ♀ Above slaty grey, feathers of neck at sides and behind with silvery tips; hind neck and upper back glossed green and purple, tail black with a blue grey bar; breast vinous chestnut, abdomen grey. Irides pale straw. Bill, eye-rim, legs and feet coral pink. Wing 242-250. Tarsus 35-38. Bill 18-22 (H.).

Resident.—Madeira.

Columba junoniæ Hartert. ("C. laurivora" auct.).

♂ ♀ Above variable grey brown; crown, throat, and nape metallic green, hind neck purple, rump and upper tail coverts slate; beneath, breast and abdomen vinous chestnut, tail grey, paler at tip, and without bar. Wing 205-220. Tarsus 35. Bill 18-20 (H.).

Resident.—Palma, Gomera (Canary Islands).

Columba bollii Godman.

♂ ♀ Greyer above than "junoniæ"; crown slaty, tail black with broad subterminal slaty grey band; beneath, throat and fore-neck slate with green gloss, breast vinous chestnut, abdomen grey. Iris straw-yellow. Bill, eyelid, legs and feet red. Wing 210-223. Tarsus 29-30. Bill 20-21 (H.).

Resident.—Tenerife, Palma, and Gomera (Canary Islands).

STREPTOPELIA.

Tail long, 12 feathers; tarsus completely bare.

Streptopelia turtur turtur (L.). TURTLE-DOVE. *Fr.* Tourterelle; *Gr.* Turteltaube; *Ital.* Tortora; *Swed.* Turtur-dufva.

♂ ♀ Crown grey, neck patches black with silvery white tips, back brown, scapulars and inner wing coverts black with broad chestnut margins, rump slaty, generally with faint rufous tips, tail black, apical portion white; beneath vinous, abdomen and under tail coverts white. Iris orange red. Bill blackish, brown at the base. Legs, feet, and eyelids red. Wing ♂ 167-182, ♀ 171-178. Tarsus 20-22. Bill 15-17.

Breeds.—British Isles (Scotland doubtful, Ireland very rare); Continental Europe south of Baltic, and Russia from 60° N. to Mediterranean; Mediterranean Islands, Madeira, Canaries; also W. Asia. Migratory; occurs on passage N. Africa; winters tropical Africa. Rare in Scandinavia (once bred in S. Sweden).

S. turtur arenicola (Hartert). Intermediate between typical "turtur" and "isabellina," has the broad isabelline margins of the latter but upper back is as in "turtur"; rump and upper tail coverts are more isabelline and crown is paler. Wing 163-177 (H.).

Breeds.—N.W. Africa (Morocco to Tripoli) and W. Asia to Transcaspia. Occurs Egypt on passage. Winter quarters not yet known with certainty.

S. turtur isabellina (Bonaparte). A redder sandy desert form; crown and throat ochreous buff, margins of scapulars broader, back, rump, and upper tail coverts isabelline. Iris orange.

Breeds.—Egypt, Libyan Desert, Nubia. Apparently resident.

Streptopelia orientalis orientalis (Latham).

♂ ♀ Upper parts ashy brown, crown grey; neck patches black with ashy blue tips; scapulars and upper wing coverts dark slate with rusty margins; rump bluish slate; tail feathers grey black with light grey tips; underparts pale vinous, greyer on throat, flanks and under tail coverts light grey. Iris orange. Eyelids blue, purple on edges. Bill bluish grey, white at base above. Legs and feet vinous red. Wing ♂ 190-204, ♀ 180-198. Tarsus 25-28. Bill 15-17 (H.).

Breeds.—C. and E. Asia. Of rare occurrence in Europe; reported several times Scandinavia and once England.

Streptopelia senegalensis ægyptiaca (Latham).

♂ ♀ Head, throat, and breast vinous; foreneck and upper parts chestnut red, rump brown; feathers on foreneck and sides of neck bifurcated, bases black, tips coppery, forming a broad collar; outer wing coverts and secondaries blue slate; tail white, basal half black. Iris reddish brown. Bill black. Legs, feet, and ring round eye red. Wing ♂ 145-150, ♀ 136-145. Tarsus 21-23. Bill 15-16 (H.).

Resident.—Nile Valley, south to Wadi Halfa.

S. senegalensis phœnicophila Hartert. Resembles "egyptiaca" but browner above and less red on upper parts, rump grey and brown mixed, vinous of neck and breast duller and browner. Wing ♂ 145-152, ♀ 139-145 (H.).

Resident.—Morocco, Algeria, and Tunisia south of Atlas; Smyrna and Constantinople (? introduced).

The typical form "*S. s. senegalensis*" is an African and S.W. Asiatic bird.

***Streptopelia decaocto decaocto* (Frivaldsky).**

♂ ♀ Above pale brown; outer wing coverts, secondaries, under tail coverts and flanks pearly grey; head, neck, breast, and abdomen vinous pink; a collar on hind neck black bordered on both sides by white; tail black, apical third white. Iris and narrow ring round eye red. Bill blackish; naked skin round eye whitish. Legs and feet bluish red. Wing ♂ 170-183, ♀ 170-180. Tarsus 21-25. Bill 15-17 (H.).

Breeds.—S.E. Europe, across whole Balkan Peninsula (but not Rumania or Greece proper); and across Asia. Apparently resident. Was probably introduced into Europe from the East.

PTEROCLETES.

Bill as in Game-birds; tarsus short and feathered; hind toe very small or absent; inhabit sandy districts; food, seeds; eggs laid on ground, oval in shape, ochreous or buff marked with brown or rufous.

PTEROCLIDÆ

Characters as above.

PTEROCLES.

Hind toe present but very small; tarsus feathered to toes in front, naked behind; toes naked; middle tail feathers lengthened.

***Pterocles orientalis* (L.). BLACK-BELLIED SAND GROUSE.**

♂ Above grey black, with ochreous tips; wing coverts and secondaries ochreous; throat chestnut, at its lower part a

triangular black mark; crown and chest pinkish grey, across the latter a black band; lower breast and abdomen black; middle tail feathers only slightly lengthened. Iris dark brown. Bill blue grey. Feet dull greyish blue. ♀ Above sandy, head and neck spotted, back and wing coverts barred dark brown; beneath, throat yellow, merging into black on lower throat, between throat and breast a narrow grey band, breast buff with black spots and across lower breast a black band, abdomen black. Wing ♂ ♀ 228-244. Tarsus 30-35. Bill 11-12 (H.).

Resident.—Spain and Portugal, E. Canaries (Fuerteventura), C. and S. Morocco, Algeria south of Atlas, C. and S. Tunisia, Tripoli, S. Russia (Volga Valley, and north of Astrakhan Govt.); also in W. Asia.

Pterocles alchata alchata (L.). PIN-TAILED SAND GROUSE.

♂ summer. Upper parts greyish green with large yellow spots; crown greyish, face orange red, wing coverts chestnut with yellow margins; beneath, throat black, foreneck yellow buff, breast dark reddish buff between two black bars, abdomen white. Bill greyish brown. Feet and naked skin round eye bluish grey. Wing ♂ ♀ 194-215. Tarsus 27-28. Bill 10-11. Middle tail feathers 60-80 m.m. longer than next pair. ♀ Upper parts yellowish barred with black and lavender, chin and throat white. ♂ in autumn resembles ♀ but has no lavender bars. Young: above buff with V-shaped brown markings on upper parts.

Resident.—Spain, Portugal, S. France.

P. alchata caudacutus (Gmelin). Colours lighter and duller, margins of wing coverts white.

Resident.—N. Africa, from C. Morocco south of Atlas, through Algeria, Tunisia, and Tripoli to Cyrenaica; also in W. Asia to India. Has occurred in Italy, Sicily, Malta.

Pterocles senegallus (L.).

♂ Isabelline; wing coverts and axillaries purplish brown with buff tips; supercilium and neck grey, centre of abdomen black. Bill bluish grey, with black tip. Feet bluish white. Skin round eye yellowish. Wing ♂ ♀ 194-210. Tarsus 23-25. Bill 11-13.

Middle tail feathers 40-60 m.m. longer than next (H.). ♀ Spotted brown on upper parts and chest ; throat ochreous.

Resident.—S. Algeria, S. Tunisia, N. Sahara, Tripoli to Egypt, and W. Asia to India ; also Africa and Arabia, south to Somaliland. Has occurred once in Sicily.

***Pterocles coronatus coronatus* Lichtenstein.**

♂ Reddish isabelline with buff tips on scapulars and wing coverts, crown cinnamon with blue grey coronet, centre of throat and loreal patches black, throat and hind neck ochreous. Bill and feet dark blue grey. Wing ♂ ♀ 191-208. Tarsus 26-29. Bill 20-21 (H.). ♀ Head and throat spotted, rest of upper and underparts barred with slaty black, under tail coverts uniform buff, throat yellow.

Resident.—Algeria and Tunisia south of Atlas, Tripoli, Cyrenaica, Egypt, N. Nubia, Sahara south to 23° N.

***Pterocles senegalensis floweri* Nicoll.**

♂ Upper parts greyish sandy, scapulars and upper wing coverts olive brown, former tipped pale yellowish, the latter with brown edges ; tail feathers grey brown with buff tips and irregular black transverse markings, central pair greyish sandy and at least 30 m.m. longer than the next pair, chin and throat ochre yellow, breast pale isabelline separated by an indistinct white line from a rusty brown band which merges into dark chestnut on abdomen ; under tail coverts buff, under wing coverts and axillaries blackish brown. Iris dark brown. Bill bluish grey. Feet light grey. Wing 177-189 (H.). ♀ Has black stripes on crown and neck and on rest of upper parts black bars ; breast pale isabelline with black spots ; abdomen rusty red with dark brown transverse lines. Wing 168-179.

Resident.—Fayoum and Upper Egypt.

The typical race "*P. s. senegalensis*" is browner on head and back and darker on breast, and occurs in N.E. Africa.

SYRRHAPTES.

Tarsus completely feathered ; hind toe absent ; toes feathered to claws and united below in a pad ; tail pointed.

Syrrhaptes paradoxus (Pallas). PALLAS'S SAND GROUSE.

♂ Above fawn, barred black, on wing coverts a chestnut bar, throat and neck patches reddish ochreous, chest buffy grey, pectoral band dull white barred black, breast buff, abdomen black. Middle tail feathers 80-120 m.m. longer than next pair. Bill pale horn. Wing ♂ 227-267, ♀ 217-237 (H.). Tarsus 20-22. Bill 8-9. ♀ No pectoral band; crown and upper parts spotted and barred with black, throat and neck patches yellow ochreous.

Breeds.—S.E. Russia (Astrakhan and Ufa), and east far into Asia. It has occurred (and occasionally bred) in periodical invasions in nearly every country in Europe from the Urals to British Isles.

LIMICOLÆ.

Includes Plovers, Sandpipers, Snipes, and Waders generally.

ŒDICNEMIDÆ.

Toes united by membrane at base; no hind toe; eyes very large; tarsus long, covered with hexagonal scales.

ŒDICNEMUS.

Bill shorter than head; wing long and pointed, inner secondaries almost as long as primaries; sexes alike; resemble Bustards somewhat, but habits more nocturnal and more partial to barren districts, squat when alarmed; eggs laid in depression, stone buff, spotted and blotched with dark brown.

Œdicnemus œdicnemus œdicnemus (L.). STONE CURLEW. *Fr.* Grand Pluvier; *Ger.* Triel; *Ital.* Occhione; *Swed.* Tjockfot.

♂ ♀ adult. Above grey brown, with dark shaft streaks and rufescent margins; wing coverts with ill-defined bands of black and white; outer primaries with a white patch on both webs; throat and stripe below eye white, separated by brown rictal stripe; beneath buffy white with narrow shaft streaks on foreneck, breast, and flanks, under tail coverts reddish buff. Bill black,

basal part yellowish. Legs and feet yellow. Iris yellow. Wing 240-255. Tarsus 70-82 (H.). Bill 39. Young: more rufous, especially on lesser wing coverts.

Breeds.—England (north to Yorkshire); Continental Europe south of Baltic, and in Russia south of 50° N.; Sardinia, Corsica, Crete; also S.W. Asia. Partly migratory; occurs N. Africa on passage and in winter and at that season also in E. Africa and Arabia. Occasional in Madeira, Canaries, and Azores.

Æ. œdicnemus distinctus Bannerman. Smaller; darker above with broader streaks; lighter beneath. Wing 225-244 (H.).

Resident.—Gran Canaria, Tenerife, Hierro, Palma, and Gomera (Canary Islands).

Æ. œdicnemus insularum Sassi. More reddish sandy brown than "œdicnemus," paler beneath with more distinct striping. Wing 220-230 (H.).

Resident.—Fuerteventura, Lanzarote, Graciosa, Allegranza (E. Canaries).

Æ. œdicnemus saharæ Reichenow. More sandy on upper parts, shaft streaks narrower. Wing 233-245 (H.).

Resident.—N.W. Africa (north and south of Atlas) to Egypt; and east to Mesopotamia.

Ædicnemus senegalensis Swainson.

Resembles "Æ. œdicnemus" but wing coverts grey with black shaft streaks, and no white bar across the lesser wing coverts; the greater wing coverts have a black subterminal bar and white tips. Wing 214-230 (H.).

Resident.—Central and E. Africa, extending north through Nile Valley to Lower Egypt.

CURSORIDÆ.

Bill more or less bent; nares separated by membrane.

PLUVIANUS.

Bill about as long as head and very slightly bent; no hind toe; middle claw slightly broadened; inner secondaries reaching nearly to end of wing; eggs laid on bare sand, and covered with sand when bird is not incubating.

Pluvianus ægyptius (L.). CROCODILE PLOVER.

♂ ♀ Above slate grey; crown, face, back, scapulars, and pectoral band greenish black; superciliary stripes (continued round occiput and meeting) and a broad band across quills white; underparts salmon buff, axillaries and under wing coverts white. Bill black. Legs and feet light greyish blue. Wing 127-140. Tarsus 32-35. Bill 17-20 (H.).

Resident.—Ranges across Central Africa east to west and Nile Valley north to Cairo.

CURSORIUS.

Bill about as long as head and considerably curved; no hind toe; middle toe very long and its claw pectinated; inhabit arid and sandy country, gregarious, wary, swift runners; when alarmed, squat like Stone Curlew; colour protective; insectivorous; nest on ground, eggs dull stone buff, marbled and spotted with pale purplish grey and dull reddish brown.

Cursorius gallicus gallicus (Gmelin). COURSER. *Fr.* Courvite; *Ital.* Corrione biondo.

♂ ♀ adult. Reddish sandy; occiput grey, line behind eye white and one below it black, both meeting on nape; under wings black (conspicuous in flight). Bill black, lighter below at base. Legs and feet china white. Wing 150-165. Tarsus 56-58. Bill 21-23. Young: sandy coloured throughout with angular black markings on upper parts.

Resident.—N.W. Africa, chiefly south of Atlas, and through Sahara to Egypt; Canary Islands; also through S.W. Asia to India. Wanders to Europe, even north to Britain, Denmark, and Finland, but more frequent in south.

GLAREOLA.

Bill short, bent above; hind toe present, middle claw pectinated; tail forked; flight Swallow-like; inhabit sandy wastes, but also marshes and inland waters; gregarious; run well; food, insects, often caught on wing; eggs laid on ground, ochreous to pale slate, spotted and blotched with greyish and dark brown.

Glareola pratincola pratincola (L.). PRATINCOLE. *Fr.* Perdrix de mer ; *Ger.* Brachschwalbe ; *Ital.* Pernice di mare.

♂ ♀ Above grey brown, tail coverts white ; throat salmon buff encircled by black collar ; breast buff, abdomen white, under wing coverts and axillaries chestnut at all ages. Bill black, red at base. Legs and feet dark brown. Wing ♂ 190-202, ♀ 187-195. Tarsus 30-33. Bill 11-13.

Breeds.—N. Africa, S. Spain and Portugal, S. France (irregular), Italy (rare), Sicily (few), Hungary, Lower Danube, Balkan Peninsula, Greece, S. Russia north to Riazan and Ural ; and in S.W. Asia. Migratory ; winters in Africa. Rare visitor in Europe outside breeding range. Casual in Britain.

Glareola nordmanni Nordmann.

Like “pratincola” but darker above and under wing coverts and axillaries black. Wing 194-205 (H.).

Breeds.—Dobrukscha, S. Russia north to Riazan and Orenburg ; also W. Asia. Migratory ; occurs on passage S.W. Asia and Egypt. Winters W. and S. Africa. Rare visitor Norway, England, Hungary, Italy, Sicily, Tunisia.

CHARADRIIDÆ.

Nostrils lie in a groove ; legs long ; wings long and pointed ; swift runners, gregarious ; little or no nest on ground ; eggs pear-shaped ; food, insects, worms, molluscs, etc.

CHARADRIUS.

No hind toe ; blunt knob on bend of wing ; tarsus with hexagonal scales ; bill short and straight ; outer and middle toes united at base by membrane (in “semipalmatus” also inner and middle toes.)

Charadrius hiaticula hiaticula L. RINGED PLOVER. *Fr.* Pluvier à collier ; *Ger.* Halsbandregenpfeifer ; *Ital.* Corriere grosso ; *Swed.* Större-Strandpipare.

♂ ♀ adult. Greyish brown ; forehead white ; forecrown, face, forebreast, and fore part of back black ; throat, collar, breast, and abdomen white ; shaft of each primary in part white, outer

web of inner primaries white. Bill black, orange at base. Eye-rim, legs and feet orange. Wing ♂ 131-141, ♀ 127-137. Tarsus 24-26. Bill 13-15. Young: brown where black in adult.

Breeds.—Coasts of N. Europe east to White Sea; Spitzbergen, Bear Island, Iceland, Faroes, British Isles, Holland, Belgium, Germany, Poland, Austria, Hungary, S. France, N. Italy, N. Sardinia, Spain and Portugal (rare), Russia (rivers). Largely migratory; occurs Rumania, Bulgaria, Malta on passage. Winters Africa south to Cape Colony but also in Mediterranean Basin, Azores, Madeira, and W. European Coasts north to Britain.

C. hiaticula tundrae (Lowe). Generally smaller and shorter winged. Wing 117-132. Upper parts somewhat darker.

Breeds.—N.E. Russia, Archangel to Petchora, and also W. Siberia; possibly Nova Zembla, Waigatz and Kolguev. Winter visitors to E. Mediterranean, Egypt, and E. Africa are chiefly of this race, but it also comes westward and occurs Norway and Britain on passage and in winter.

Charadrius semipalmatus Bonaparte.

♂ ♀ Closely resemble "hiaticula" but differ as follows: smaller, bill shorter and comparatively thicker; more white on shaft of 1st primary; a small but distinct web between inner and middle toes. Wing 122-135 (H.).

An American species; has occurred once in England.

Charadrius dubius curonicus Gmelin. LITTLE RINGED PLOVER. *Fr.* Petit Pluvier à collier; *Ger.* Flussregenpfeifer; *Ital.* Corriere piccolo; *Swed.* Mindre Strandpipare.

Smaller than "hiaticula" and without white patch on outer webs of inner primaries; shaft of 1st primary white at all ages, of other primaries brown. Bill slender, black with a yellow spot at base below. Eye-rim yellow. Legs and feet yellow. Wing ♂ ♀ 109-119. Tarsus 24-25. Bill 12-14.

Breeds.—Continental Europe from 62° in Sweden, 67° in Finland, and 64° in Russia south to Mediterranean, Black Sea and Caucasus; Mediterranean Islands; N. Africa (Egypt to Morocco); also widely in Asia. Migrates; occurs in winter in tropical Africa and Asia. Rare visitor to British Isles, Madeira, Azores, Canaries.

The typical form "C. d. dubius" is E. Asiatic.

Charadrius alexandrinus alexandrinus L. KENTISH PLOVER. *Ger.* Seeregenpfeifer; *Ital.* Frattino.

♂ Above light brown; forehead and eyebrow white; forecrown, lores, ear coverts, and patches on sides of neck black; crown and nape rufous; nuchal collar and underparts white. Bill black. Legs and feet greyish black. In ♀ black on head replaced by brown. Wing ♂ ♀ 107-114. Tarsus 28-30. Bill 14-15.5. Young like ♀ but feathers have lighter tips and brown patches on neck do not meet to form a pectoral band.

Breeds.—S.W. Norway, S. Sweden, Denmark (few), S. England, Coasts of Continental Europe generally from Baltic south to Mediterranean; Mediterranean Islands, Azores, Madeira, Canaries; N. Africa (Morocco to Egypt); Black and Caspian Seas and in C. Asia. Migratory; occurs in winter in tropical and S. Africa and in S. Asia; many remain in Mediterranean Basin.

Charadrius pecuarius allenbyi Nicoll.

♂ ♀ Above brown; forehead and eyebrows meeting behind at nape white; forecrown and band from bill under eye round nape black; carpal coverts black; outer webs of inner primaries white at base; beneath white tinged orange buff on breast. Bill black. Legs and feet greenish grey. Wing ♂ 102-111, ♀ 104-112 (Nicoll). Tarsus 30-32. Bill 15.5-17. Many examples lack the black under eye, apparently not due to age or sex.

Breeds.—Egypt. Apparently resident.

Is the Northern form of "*C. p. pecuarius*," an African Plover, from which it differs by its longer wing; in the typical race wing ♂ 98-106, ♀ 98-110.

Charadrius mongolus atrifrons Wagler.

♂ ♀ summer. Above light brown; forehead, throat, foreneck, and abdomen white; forecrown and face black; crown, stripe behind eye, neck and breast chestnut. In winter the black and chestnut are replaced by brown. Bill black. Legs and feet greyish brown. Wing 125-131. Tarsus 32-35. Bill 17-20.5 (H.).

Breeds.—Central Asia. Winters in S. Asia and E. Africa; occurs Egypt on passage.

The typical race "*C. m. mongolus*" occurs in E. Asia.

Charadrius leschanaultii Lesson.

Resembles "*C. m. atrifrons*" but is larger. Wing ♂ ♀ 136-149. Tarsus 36-39. Bill 22.5-27 (H.).

Breeds.—Persia and C. Asia. Chief migration is to south-east but many migrate to Africa ; it occurs in Egypt on passage.

Charadrius morinellus L. DOTTEREL. *Fr.* Pluvier guignard ; *Ger.* Mornellregenpfeifer ; *Ital.* Piviere tortolino ; *Swed.* Fjällpipare.

♂ ♀ summer. Above grey brown, wing coverts, scapulars, and secondaries with cinnamon margins ; crown black, supercilia (meeting at nape) white, face and throat white spotted brown ; chest grey brown, pectoral band white, breast and flanks chestnut, centre of abdomen black, under tail coverts buff. Bill black. Legs and feet brownish yellow. Wing 145-157. Tarsus 35-37. Bill 15-16. In winter no black on crown ; above grey brown with rusty margins to feathers, face dull white streaked brown, breast light brown with buff tips and a faint white band, abdomen white, flanks pale brownish grey, under tail coverts buff or white. Young : above brown (almost black on crown and upper back) with buff margins ; beneath, breast and sides buff.

Breeds.—Norway south to 60°, Finmark, N. and C. Sweden, Lapland, tundras of N. Russia, Kolguev and Waigatz Islands, Mountains of Germany and Austria (local), Scottish Mountains, English Lake District (rare), and widely through N. Asia. Migrates ; winters in Mediterranean Basin, N.W. Africa, Egypt.

Charadrius asiaticus asiaticus Pallas. CASPIAN PLOVER.

♂ ♀ adult, summer. Above brown ; supercilium, forehead, lores, face and throat white ; breast chestnut, pectoral band black, abdomen white, axillaries white. Bill black. Legs and feet greenish to yellowish grey. Wing 150-155. Tarsus 40-42. Bill 19.5-21.5 (H.). In winter feathers above have lighter edges, forehead, lores and supercilium are buff ; underparts white tinged buff, breast-band light brown. Young : like adult in winter dress, but feathers above have rufous margins and breast-band is rusty brown.

Breeds.—Volga and Ural districts in Russia and in W. Asia. Winters in E. Africa south to Cape. A rare visitor to W. Europe, has been obtained four times in England.

Charadrius vociferus L. KILLDEER PLOVER.

♂ ♀ Somewhat resemble "*C. hiaticula*," and distinguished by a double band of black on the chest, cinnamon rump and upper tail coverts. Wing 160-175. Tarsus 35-37. Bill 18-20.

An American species breeding as far north as S. Canada. Has occurred six times in Britain.

Charadrius apricarius apricarius L. GOLDEN PLOVER.

Fr. Pluvier doré; *Ger.* Goldregenpfeifer; *Ital.* Piviere; *Swed.* Ljung-pipare.

♂ summer. Above black brown spangled with gold; line at base of bill across forehead, lores, face, throat and underparts black; forehead, supercilium (continued down sides of neck and breast), under wing coverts and axillaries white; tail barred blackish brown and white. ♀ has the chin white and sometimes a few white feathers on underparts. In winter all black is lost; neck and breast grey brown suffused with yellow and with dark shaft streaks; abdomen white. Bill black. Legs and feet dark blackish brown. Wing ♂ ♀ 177-192. Tarsus 38-41. Bill 22-24. Young are like adults in winter plumage but yellow is more intense.

Breeds.—Bear Island, Iceland, Faroes; Continental Europe north from Holland (rare), Denmark, N. Germany, Poland and about 58° N. in Russia; also in N. Asia east to Yenisei. Migratory; winters chiefly in Mediterranean Basin, but also in British Isles; occasional in N. Africa, Canaries, Azores, and Madeira.

C. apricarius oreophilus A. C. Meinertzhagen. Upper parts darker, dark centres to feathers more conspicuous and yellow markings richer and smaller. In ♂ in summer black band on forehead and white band from eye down sides of neck and breast absent or only slightly indicated. ♀ in summer, white band down sides of neck absent and sides of breast golden spotted sepia. In winter both sexes are indistinguishable from ♂ ♀ "*apricarius*."

Breeds.—British Isles, N. and W. Jutland. Exact distribution is still uncertain.

Charadrius dominicus dominicus Müller. AMERICAN GOLDEN PLOVER.

♂ ♀ Like "apricarius" but under wing coverts and axillaries pale grey brown. Wing 176-187.

Breeds.—Arctic N. America. Migrates south in winter; of exceptional occurrence in Europe; recorded once Heligoland and four to five times in British Isles.

C. dominicus fulvus Gmelin. Asiatic Golden Plover. ♂ ♀ Axillaries and under wing coverts as in "dominicus" but has a shorter wing. Bill and tarsi are as long. Wing 160-175.

Breeds.—E. Siberia and W. Alaska. Migrates south through Asia; of rare occurrence in Europe. Has been recorded from Poland, Norway, Heligoland, Malta, British Isles and Spain, and once from Algeria.

SQUATAROLA.

Like "Charadrius" but has a small hind toe; nests on ground in tundras of both hemispheres; eggs 4, about intermediate in colour between those of Golden Plover and Lapwing.

Squatarola squatarola squatarola (L.). GREY PLOVER. *Fr.* Vanneau Pluvier; *Ger.* Kiebitzregenpfeifer; *Ital.* Pivieressa; *Swed.* Kust-pipare.

♂ ♀ summer. Above deep brown with white tips to feathers; forehead and supercilium (continued down neck to sides of chest) white; lores, face, throat, breast and abdomen black, vent white, under wing coverts white, axillaries black. In winter underparts are dull white with pale brown streaks. Bill black. Legs and feet slaty grey. Wing ♂ ♀ 188-203. Tarsus 45-49. Bill 27-31. Young are like winter adults, but tips of feathers are yellow as in "apricarius" but duller.

Breeds.—N. Russian tundras, Kolguev, Dolgoi, Nova Zembla; in W. Siberia to Taimyr and in E. Arctic America. Migrates; occurs in Continental Europe, W. Asia and Egypt on passage; winters in British Isles, Mediterranean Basin, and Africa south to Cape Colony; in America south to West Indies and Brazil.

VANELLUS.

Crested; wings rounded, 1st, 2nd, 3rd and 4th primaries nearly equal; hind toe present.

Vanellus vanellus (L.). LAPWING. *Fr.* Vanneau ; *Ger.* Kiebitz ; *Ital.* Pavoncella ; *Swed.* Tofspiva. .

♂ ♀ Above metallic green with purple reflections ; crown, crest, throat and chest black ; upper and under tail coverts cinnamon ; tail, basal half white, remainder black with narrow brownish tip ; sides of neck and underparts below chest white. Bill black. Legs and feet slaty black. Wing 218-237. Tarsus 45-49. Bill 22-25.

Breeds.—British Isles, Faroes, Continental Europe from C. Norway, 62° in N. Russia and 59° in Urals south to Mediterranean and Caucasus (not in Greece, S. Italy, or Mediterranean Islands) ; N. Morocco ; and widely in Asia. Migrates ; winters in Mediterranean Basin, N. Africa, Egypt and S. Asia to Japan ; many remain in British Isles and W. Europe ; occurs Madeira and Canaries but not common. Rare visitor to Azores and Iceland.

CHETTUSIA.

No crest ; bill thin ; hind toe small.

Chettusia gregaria (Pallas). SOCIABLE PLOVER.

♂ ♀ Above dove grey ; crown, lores, post-ocular streak, and primaries black ; forehead, supercilium (prolonged back and meeting at nape), greater wing coverts, secondaries, tail (two central pairs with black bar), and under tail coverts white ; throat and cheeks buff, breast grey, belly black, centre of abdomen chestnut. Bill, legs and feet black. Wing 200-205. Tarsus 55-60. Bill 25-27.

Breeds.—S., C., and E. Russia up to about 53° N. ; also in Siberia. Occurs in Egypt and Caucasus on passage ; winters in N.E. Africa and India. Rare visitor to W. Europe, casual in British Isles.

Chettusia leucura (Lichtenstein).

♂ ♀ Crown, throat, foreneck and upper parts brown, tinged lilac on back and wings, median wing coverts and tail white ; primaries black, under wing coverts and axillaries white ; beneath, breast grey, abdomen and under tail coverts buff. Iris red brown. Bill black. Legs and feet yellow. Wing 173-185. Tarsus 64-72. Bill 28-30 (H.).

Breeds.—S.W. Asia. Rare in Egypt on passage ; winters N.E. Africa to India. Very rare visitor to Europe, has occurred in Russia, S. France, and Malta.

HOPLOPTERUS.

Bill thin; at bend of wing a pointed curved spur; no hind toe; slight crest on head.

Hoplopterus spinosus (L.). SPUR-WINGED PLOVER.

♂ ♀ Above light brown; crown, occipital crest, apical half of tail, centre of throat, breast, upper abdomen, and under surface of quills blue black; face, sides of throat, neck, lower abdomen, under tail coverts, and basal part of tail white. Iris red. Bill, legs and feet black. Wing 190-202. Tarsus 65-66. Bill 23-25.

Breeds.—Nile Valley, north to Alexandria; possibly Crete; across Africa, south of Sahara; also in Syria and Cyprus. Of occasional occurrence in Greece; rare visitor to Italy and Malta. Apparently resident.

ARENARIA.

Bill hard, conical, pointed; tarsus short. Shore birds inhabiting rocky coasts and nesting among herbage or under shelter of a stone, near the sea; eggs dull greenish grey, blotched and spotted with purplish grey and dull or olivaceous brown.

Arenaria interpres interpres (L.). TURNSTONE. *Fr.* Tournepierre; *Ger.* Steinwlzer; *Ital.* Voltapietre; *Swed.* Roskarl.

♂ ♀ summer. Above black and chestnut; crown black streaked white; forehead, lores, chin, lower back, rump, longer tail coverts, tips of median wing coverts and secondaries, and under parts white; stripe behind the forehead and under the eye, sides of throat, chest, and shorter upper tail coverts black. Bill greyish black. Legs and feet orange. In winter, upper parts dark black brown with pale brown margins, lores and sides of head brown. Wing ♂ 146-158, ♀ 150-159. Tarsus 25-27. Bill 20-23.

Breeds.—Iceland and Greenland, Spitzbergen, Scandinavian Coasts, Lapland, Finland, Danish Islands (rare), shores of Baltic and Islands off Baltic Provinces, N. Russia, Kolguev, Dolgoi, Nova Zembla, and across N. Siberia to Alaska. Migrates; occurs on passage and in winter on British and other European Coasts south to Mediterranean and Egypt, and widely elsewhere, even through S. Hemisphere to New Zealand. Many remain during summer in winter quarters, but not breeding.

BARTRAMIA.

Bill straight, shorter than tarsus; gape deep, reaching under the eye; tail wedge-shaped.

Bartramia longicauda (Bechstein). BARTRAM'S SAND-PIPER.

♂ ♀ Above dark brown with buff margins, primaries barred white on inner webs, rump and upper tail coverts black; chin and abdomen white, breast and flanks buff with pointed or arrow-shaped brown markings, under tail coverts buff. Bill black, yellowish at base. Legs and feet light yellow. Wing 163-180. Tarsus 46-47. Bill 28-31.

An American breeding species of rare occurrence in Europe. Recorded Malta, Italy, Germany, Holland, Denmark, and about twelve times in British Isles.

TRINGA.

Bill of variable length, with soft tip; toes free without membrane; hind toe well developed. Small Waders, inhabiting sea-coast and damp localities inland; run swiftly, gregarious except in breeding season; nest a lined depression; eggs 4, pyriform, greenish grey or buff or dull dark buff blotched or spotted with brown.

Tringa ferruginea Brünnich. CURLEW SANDPIPER. *Fr.* Becasseau cocarli; *Ger.* Bogenschnäbeliger Strandläufer; *Ital.* Piovanello; *Swed.* Spofsnäppa.

Adult summer. Above mottled chestnut and black, upper and under tail coverts white with black bars; beneath chestnut with white edges. In winter, above brownish grey with faint dark shaft streaks, upper tail coverts all white; beneath white, streaked brown on sides of head, throat and chest. Bill decurved, black. Legs and feet black. Wing ♂ ♀ 120-132. Tarsus 28-30. Bill 32-41. Young: above brown, with white margins; beneath white, buff on chest, streaks almost obsolete.

Breeds.—So far as is known, shores of E. Siberia, west to Taimyr Peninsula and Yenisei. Migrates; occurs on passage on shores, inland lakes, and river banks of Continental Europe and

British Isles south to Mediterranean and Islands, Canaries (occasional) and Asia to China. Winters in Africa from N.W. Africa and Egypt south to Cape and from S. Asia to Australia.

Tringa alpina alpina L. DUNLIN. *Fr.* Bécasseau variable; *Ger.* Alpenstrandläufer; *Ital.* Piovanello pancia nera; *Swed.* Kärrensäppa.

♂ ♀ adult summer. Above black with broad chestnut margins, inner secondaries mostly white, centre of rump brown, sides white; beneath, throat and chest white streaked black, breast black, abdomen white. Bill slightly decurved, black. Legs and feet black. In winter, above grey brown with faint dark shaft streaks; beneath dull white faintly streaked pale brown on chest. Wing ♂ 107-118, ♀ 110-121. Tarsus ♂ 23-26, ♀ 24-27. Bill ♂ 25-30, ♀ 26-33. Young: above dark brown with narrow rufous margins, neck washed with buff, breast white striated brown.

Breeds.—Greenland, Spitzbergen, Iceland, Faroes, British Isles, Continental Europe from Denmark, Holland, and German Coast, and Russia from Moscow and Perm north to Arctic Coast; Islands of Kolguev, Dolgoi, Waigatz, Nova Zembla. Migratory; occurs on passage throughout Europe. Many winter in Britain and S.W. European Coasts; also Mediterranean Basin; and on the east side of Africa south to Mozambique, on the west side to Canaries and Madeira.

Birds from British Isles, Germany, Holland, and Denmark have been distinguished as "*T. a. schinzi*" Brehm by Schiöler on account of darker russet markings on back and less black on breast than typical northern race, but the distinction seems untenable.

A doubtful race "*T. a. pusilla*" (Falk) is described as breeding from the Petchora River eastwards into Siberia. It is somewhat larger, especially in the bill. Wing averages longer than in typical form and in ♀ reaches 125. Tarsus ♂ 24-26, ♀ 25-29. Bill ♂ 29-34, ♀ 30-35. This race occurs in winter in the Eastern Mediterranean but many come west at that season and it appears to be in British Isles as plentiful in winter as typical "*alpina*." Another race, lighter coloured in summer, "*T. a. sakhalina*" (Vieillot) breeds in N.E. Siberia and N. America. It is distinctly larger. Bill ♂ 31-36, ♀ 34-42 (H.) and has occurred at Fair Isle and probably elsewhere in Europe.

Tringa minuta Leisler. LITTLE STINT. *Ger.* Zwergstrandläufer ; *Ital.* Gambecchio ; *Swed.* Småsnäppa.

♂ ♀ summer. Above black with broad chestnut margins and some white tips, inner primaries with white shafts, outer tail feathers smoky brown ; beneath white, chest greyish with chestnut and brown spots. Bill short, narrow, black. Legs and feet black. In winter : above grey brown with dark shaft streaks ; beneath white. Wing ♂ 92-98, ♀ 96-101. Tarsus ♂ 20-21, ♀ 20-23. Bill ♂ 16-19, ♀ 18-19.

Breeds.—Finmark (Porsanger Fiord), N. Russian tundras from Murmansk to Petchora, and on Nova Zembla, Waigatz, Dolgoi and Kolguev Islands ; also locally in N. Russia south to Govts. of Moscow, Jaroslav, Perm, and Uralsk ; and in W. Siberia. Migrates ; occurs on passage in Britain and Continental Europe to Mediterranean, and Asia south to Turkestan. Winters in S.W. Asia and Africa south to Cape. It often remains in winter quarters during our summer, but does not breed.

Tringa minutilla Vieillot. AMERICAN STINT.

♂ ♀ Resemble "minuta" but legs slightly paler, more grey brown, breast somewhat more spotted and black centres of feathers of upper parts slightly more developed, while chestnut margins are narrower. In winter distinguished from "minuta" by dusky shaft-streaks on upper breast. Wing ♂ ♀ 88-90. Tarsus 17-19. Bill 16.5-19.

A North American species of rare occurrence in Europe. Recorded S.W. England four times.

Tringa temmincki Leisler. TEMMINCK'S STINT. *Ger.* Grauer Zwergstrandläufer ; *Ital.* Gambecchio nano ; *Swed.* Mosnäppa.

♂ ♀ adult, summer. Above black and grey mottled, with rufous edges and a bronzy shade, rump uniform dark brown, outer tail feathers pure white, shaft of 1st primary only white ; beneath white, foreneck and chest greyish buff with dark brown streaks. Bill black, olive brown at base below. Legs and feet olive yellow to olive brown. In winter, above grey brown with dark streaks ; beneath white, foreneck and chest greyish brown. Wing ♂ ♀ 97-100. Tarsus 17-19. Bill 16-18. Young : above more bronzy and less black than summer adult, with buff edges and no streaks on foreneck.

Breeds.—S. Norway Mountains (occasional), N. Norway to Finmark, Lapland, N. Finland, tundras of N. Russia south to about 60° N., Islands of Kolguev, Dolgoi, and Waigatz; and across N. Siberia. Migrates; occurs on passage in British Isles (not common), and Continental Europe south to Mediterranean. Winters in extreme south of Europe, N.W. Africa, Egypt, and Africa south to White Nile; also S. Asia.

***Tringa maculata* Vieillot. PECTORAL SANDPIPER.**

♂ ♀ adult. Above blackish brown, with chestnut margins on crown and reddish buff on remainder upper parts, secondaries with very narrow white edges; central upper tail coverts black, outer white; central tail feathers black brown, pointed and about 10 m.m. longer than the others, which have rounded tips; behind eye an indistinct white patch; beneath white, brownish on chest with black bases to feathers and dark shaft streaks. Bill greenish black. Legs and feet yellow brown. Wing 130-142. Tarsus 28-31. Bill 25-29. Young are more chestnut; chest reddish buff, streaked brown.

Breeds.—Arctic America and E. Siberia. An occasional visitor to British Isles.

***Tringa acuminata* (Horsfield). SIBERIAN PECTORAL SANDPIPER.**

Adult resembles "*maculata*" but all tail feathers are pointed; rather more chestnut on upper parts; beneath white, chest rufous tinged and with no shaft streaks but with angular spots. Bill brownish black. Legs and feet brownish yellow. Wing ♂ 135-142, ♀ 125-131. Tarsus ♂ 29.5-31 (H.). Young: more chestnut above, throat white, chest reddish buff with white margins, sides of foreneck streaked and behind eye a white patch.

Breeds.—E. Siberia. Of very rare occurrence in Britain (twice in England).

***Tringa bairdi* (Coues). BAIRD'S SANDPIPER.**

Is a miniature "*maculata*" in all stages; two central pairs of tail feathers somewhat longer than the others, upper tail coverts chiefly black with brown edges, only white at sides. Bill black. Legs and feet slaty black. Wing ♂ ♀ 123-129. Tarsus 22-25. Bill 21-23.

Breeds.—Arctic America. Has occurred rarely in British Isles.

Tringa fuscicollis Vieillot. BONAPARTE'S SANDPIPER.

Resembles "*T. bairdi*" but upper tail coverts all white with brown streaks, only occasionally a black feather present. Bill generally longer and stronger, black. Legs and feet dusky greenish. Wing ♂ ♀ 119-124. Tarsus 22-25. Bill 21-26.

Breeds.—Arctic America. Has occurred at times in British Isles; and once obtained Franz Joseph Land.

Tringa canutus canutus L. KNOT. *Fr.* Maubèche; *Ger.* Isländischer Strandläufer; *Ital.* Piovanello maggiore; *Swed.* Kustsnäppa.

♂ ♀ adult, summer. Above black, variegated with red buff; upper tail coverts white with black bars; beneath chestnut, under tail coverts white with a few brown spots; tail square, central feathers not prolonged. In winter: above grey brown with faint dark shaft streaks; beneath white barred grey on breast and flanks. Bill, legs and feet black. Wing ♂ ♀ 158-172. Tarsus 28-33. Bill 28-34. Young have crescentic dark margins and white tips on upper parts.

Breeds.—Iceland (doubtful), Greenland, Taimyr Peninsula, New Siberian Islands. Migrates; occurs on passage in Europe, chiefly west. Winters in British Isles, Holland, Belgium, France, Portugal, Sardinia, Sicily, N.W. Africa and Africa to Cape; also S. Asia and Australia. Rare visitor to Egypt, Madeira, and Azores.

The Greenland breeding birds may belong to the American race "*T. canutus rufa*."

Tringa maritima maritima Brünnich. PURPLE SANDPIPER. *Fr.* Bécasseau violet; *Ger.* Seestrandläufer; *Swed.* Skärsnäppa.

♂ ♀ adult, summer. Above black with some chestnut tips and margins, rump and upper tail coverts black, central tail feathers longer than lateral by about 9 m.m.; beneath dull white spotted and streaked brown; inner secondaries almost entirely white. In winter: above dark brown with purple gloss; beneath, throat and chest grey brown, remainder white, with grey centres on breast and flanks. Bill brownish black, yellowish at base. Legs and feet brownish yellow. Wing ♂ 119-132, ♀ 122-137. Tarsus 21-25. Bill 26-35.

Breeds.—Faroes, Iceland, Greenland, Spitzbergen, Norway, Finmark south to about 63°, Sweden (Jemtland), N. Russia and most of Arctic Islands, and in Siberia and Arctic America. Migrates, but many remain in north. Winters in British Isles, Denmark, Holland, Germany, Hungary, France, Asia Minor (rare), Spain and Portugal (not common). Has occurred in Morocco and Azores; on American Coast winters south to Florida.

EREUNETES.

Like "Tringa" but front toes united by web almost to middle.

Ereunetes pusillus pusillus. SEMI-PALMATED SAND-PIPER.

♂ ♀ Above greyish brown, with black centres to feathers and some chestnut margins; underparts white, spotted dark brown on throat and sides of breast. Bill black. Legs and feet slate colour. Wing ♂ 91-99, ♀ 95-101. Tarsus 19.5-21. Bill ♂ 16-22, ♀ 18-23 (W.).

Breeds.—Arctic America. Winters from S. United States to Patagonia. Has occurred once in England.

MACHETES.

Bill in both sexes covered at base with short feathers. Male develops ruff in breeding plumage, and forehead, lores, and sides of head become featherless and covered with warty excrescences.

Machetes pugnax (L.). ♂ RUFF, ♀ REEVE. *Fr.* Combattant; *Ger.* Kampflahn; *Ital.* Combattente; *Swed.* Brushane.

♂ adult. Above dark brown with paler rufous margins; beneath, foreneck and breast grey brown with half-concealed dark markings (sometimes entire underparts grey brown), abdomen and chin white, axillaries white. (In breeding season the face is bare and covered with yellow tubercles; and there is a tuft of coloured feathers on either side of head and a large ruff on the neck and upper breast (May and June), colours variable, hardly two alike.) ♀ resembles ♂ but more mottled with black feathers above. Bill blackish brown, flesh coloured at base.

Legs and feet yellowish brown. Wing ♂ 177-190, ♀ 145-160. Tarsus ♂ 47-50, ♀ 39-45. Bill ♂ 34-36, ♀ 27-32. Young are more chestnut on upper parts.

Breeds.—Scandinavia, Russian Lapland, Kolguev, Waigatz, in Russia south to Orenburg, Lower Don and Bessarabia, Galicia, Hungary, N. Germany, Denmark, Holland, Belgium and N. France; also in W. Siberia. Migrates; occurs on passage all over Europe and British Isles (where it sometimes breeds). Winters in south, in Africa, Asia, and eastern N. America.

TRYNGITES.

Bill straight, hard, shorter than tarsus; middle pair tail feathers longer than remainder.

Tryngites subruficollis (Vieillot). BUFF-BREASTED SANDPIPER.

Resembles a small Reeve; can be recognised at all ages by the peculiar black mottling of inner webs of quills and under primary coverts and by the underparts and lower carpal coverts being reddish buff; axillaries white. Bill greenish black. Legs and feet brownish yellow. Wing ♂ 128-135, ♀ 126-132. Tarsus 31-32. Bill 19-20.

Breeds.—Arctic America. Of rare occurrence in Europe, recorded British Isles, Heligoland.

CALIDRIS.

Like "Tringa" but has no hind toe.

Calidris arenaria (L.). SANDERLING. *Fr.* and *Ger.* Sanderling; *Swed.* Sandlöpare.

♂ ♀ adult, summer. Above black with cinnamon margins and tips, tips and margins of median wing coverts white; underparts white, throat and chest cinnamon spotted with brown. In winter: above pale grey brown with faint dark streaks, forehead, face, and underparts pure white. Bill, legs and feet black. Wing ♂ 118-127, ♀ 119-131. Tarsus 23-26. Bill 22-27. Young in autumn are black above with buffish white edges and tips and have a brownish spot in front of eye; underparts white, tinged rusty on breast.

Breeds.—Greenland, Arctic America, N. Siberia, Spitzbergen, Iceland (doubtful). Occurs in all parts of Europe and N. Africa on migration, which extends far into S. Hemisphere, but also occurs in winter on British Coasts and Coasts of W. Europe and Mediterranean.

LIMICOLA.

Bill long, flat, and wide; hind toe small; small Waders, inhabit inland lakes and marshes rather than sea-coast.

Limicola falcinellus falcinellus (Pontoppidan). BROAD-BILLED SANDPIPER. *Swed.* Myrsnäppa.

♂ ♀ summer. Above black, with narrow chestnut or buff margins; beneath white, spotted brown on chin, throat, foreneck, and chest; axillaries white. In winter: above grey, with dark centres and white margins; beneath white slightly spotted on foreneck. Bill reddish brown with black tip. Legs and feet greyish black. Wing 105-110. Tarsus 23. Bill 35.

Breeds.—Norway to Dovrefeld, and Sweden to about middle, Lapland, Finland, N. Russia, and in Ural district; also in Siberia. Occurs in winter in Eastern Mediterranean; rare in W. Europe, even on passage. Casual in British Isles.

MACRORHAMPHUS.

Bill like a Snipe's; ear opening as in Snipe, almost under eye; tarsus shorter than bill; hind toe present; web between bases of middle and outer toes well marked, very small between middle and inner toes.

Macrorhamphus griseus griseus (Gmelin). RED-BREADED SNIPE.

♂ ♀ summer. Above dark brown with rufous edges and bars, lower back, rump and upper tail coverts white with brown spots; tail dark brown barred white; beneath reddish buff, margins paler, with black spots and bars; under wing coverts and axillaries white, barred brown. In winter, above grey brown; beneath white, flanks barred brown, sides of throat and upper breast brownish grey; white throat and bicoloured upper tail

coverts distinguish it at all ages. Wing 142-150. Tarsus 33-37. Bill ♂ 55-57, ♀ 57-61 (II.).

A North American bird; occasional in W. Europe, has occurred in British Isles, France and Denmark.

TOTANUS.

Waders; outer and middle toes united by web at base (inner and middle also in Redshank); bill hard, long, and straight (occasionally slightly bent upwards); wing long and pointed; frequent sea-coasts on passage and in winter; breed inland, nest (with few exceptions) on ground, usually near water; eggs 4, variable, greenish, ochreous buff or dull stone grey blotched with pale purplish grey and brown of various shades.

Totanus fuscus (L.). DUSKY REDSHANK. *Fr.* Chevalier brun; *Ger.* Dunkler Wasserläufer; *Ital.* Gambetta fosca; *Swed.* Svartsnäppa.

♂ ♀ summer. Sooty black, spotted and barred white on upper parts, eyelids white, lower back and rump white, secondaries white, barred grey; beneath more or less barred and mottled white, tail and tail coverts (above and below) barred white, under wing coverts and axillaries white. In winter: above grey brown, wing with white margins; beneath white, greyish on foreneck. Bill black, reddish at base below. Legs and feet dark purple red (summer), more orange red (winter). Wing 152-167. Tarsus 55-60. Bill 54-60. Young: above darker than winter adult, underparts grey brown barred and mottled white.

Breeds.—N. Europe, chiefly above Arctic Circle, but in Russia south to about Moscow; also across N. Asia. Occurs on passage over Europe, but rare in Britain. Winters in S. Europe and Asia, and Africa south to Cape.

Totanus totanus totanus (L.). REDSHANK. *Fr.* Chevalier Gambette; *Ger.* Rotschenkel; *Ital.* Pettegola; *Swed.* Rödbent-snäppa.

♂ ♀ summer. Above brown with dark shaft streaks and some bars; lower back and rump white, secondaries white; tail white barred brown; beneath, white spotted and streaked

brown, axillaries white. In winter : above uniform brown ; beneath greyer and streaks less pronounced. Bill (summer) black, reddish at base, (winter) black brown, base orange yellow. Legs and feet (summer) orange red, (winter) orange yellow. Wing 150-160. Tarsus 44-48. Bill 39-43. ♀ usually the larger.

Breeds.—British Isles, and Continental Europe south from N. Norway ; Morocco ; also in W. Asia. Winters on Norwegian Coasts (few), British Coasts (many), but majority in south of Europe and through Africa to Cape Colony.

T. totanus robustus Schiöler.

Larger than "totanus," with stronger but not longer bill and legs and longer wing ; in spring fore part of breast and sides very strongly spotted. Wing ♂ ♀ 160-169. Bill 39-44.

Breeds.—Iceland and probably Faroes. Some winter there, but majority migrate and winter in British Isles and reach even to Morocco.

Totanus melanoleucus (Gmelin). GREATER YELLOW-SHANK.

♂ ♀ In size and appearance resemble "T. nebularius" but legs longer and yellow and bill very slightly bent upwards. Wing 188-202. Tarsus 58-65. Bill 55-57.

An American species ; has occurred very rarely in England.

Totanus flavipes (Gmelin). YELLOWSHANK.

♂ ♀ Resemble "T. glareola" but larger, with brown lower back ; upper tail coverts white with some dark bars, axillaries white with faint brownish bars. Legs and feet yellow. Wing 156-170. Tarsus 48-58. Bill 35-43.

Also an American species ; has occurred six times in British Isles.

Totanus stagnatilis Bechstein. MARSH SANDPIPER.
Ger. Teichwasserläufer ; *Ital.* Albastrello.

♂ ♀ summer. Above buff brown, with diagonal dark bars and streaks ; lower back and rump white, upper tail coverts mostly white ; tail feathers white, central pair barred black, remainder mottled brown on outer edge ; secondaries grey brown ; beneath white, with black spots on throat, chest and flanks ; under wing coverts and axillaries white. Bill black. Legs and feet

yellowish green. In winter, above light brown with narrow dark shaft streaks ; below white, slightly spotted black on foreneck. Wing 135-147. Tarsus 53-58. Bill long and thin, 40-44. ♀ generally the larger.

Breeds.—S.E. Europe, Hungary, Rumania and S. Russia up to Perm ; and in Siberia. Migrates ; winters Africa, S. Asia and Australia. Accidental in W. Europe, including British Isles.

Totanus nebularius (Gunnerus). GREENSHANK. *Fr.* Chevalier gris ; *Ger.* Grünschenkel ; *Ital.* Pantana ; *Swed.* Gluttsnäppa.

♂ ♀ summer. Grey brown, head and neck streaked dark brown, many feathers of back and scapulars all or partly black ; rump and shorter upper tail coverts white, longer tail coverts and tail white with brown bars ; beneath white, throat and breast spotted black, flanks barred. In winter, no black feathers on upper parts or spots on chest. Bill slightly recurved, black, bluish grey at base. Legs and feet greenish. Wing 180-190. Tarsus 54-66. Bill 53-57.

Breeds.—N. Europe, from Highlands of Scotland to Norway, Sweden, and Russia as far south as Ufa, and across N. Asia. Occurs on passage throughout Europe and Asia. Winters south in Africa to Cape Colony, and in the east as far as Australia and New Zealand ; a few remain in Europe, including Britain.

Totanus ochropus (L.). GREEN SANDPIPER. *Fr.* Chevalier cul-blanc ; *Ger.* Waldwasserläufer ; *Ital.* Culbianco ; *Swed.* Skoggsnäppa.

♂ ♀ summer. Above brown, tinged oily green, streaked on head and upper neck and spotted on back and wings with white ; shaft of 1st primary brown ; lower rump, upper tail coverts and tail white, middle tail feathers with broad brown bars ; under parts white, throat and upper breast streaked dark brown, axillaries dark brown barred diagonally white. Bill dark olive green, tipped black. Legs and feet bluish olive green. In winter, spots on upper parts are faint or absent. Wing 137-147. ♀ usually the larger. Tarsus 33-37. Bill 33-36.

Breeds.—N. Europe and Asia, north of a line from Denmark through Germany, Bohemia, Galicia, across Russia to Transcaspia and Turkestan ; not in Britain. Winters in Britain (few),

Mediterranean Countries, Africa and S. Asia. This bird lays its eggs in old nests of Thrushes, Pigeons, etc., in trees in swampy places.

Totanus solitarius solitarius (Wilson). SOLITARY SANDPIPER.

♂ ♀ Resemble "T. ochropus" and have the shaft of 1st primary brown, but central upper tail coverts and central tail feathers are like the upper parts, the others being broadly barred brown and white, and white bars on axillaries are broader. Wing 128-134. Tarsus 31-32. Bill 30-31. Nesting habits are like those of "ochropus."

An American species, rare in Europe; six have been recorded, all in Britain.

Totanus glareola (L.). WOOD SANDPIPER. *Ger.* Bruchwasserläufer; *Ital.* Piro-piro boschereccio; *Swed.* Grönbena.

♂ ♀ summer. Resemble "T. ochropus," but upper tail coverts show a few brown marks or spots and white on rump is much narrower; tail white with narrow brown bars; lower back is like mantle, axillaries and under wing coverts white with few pale brown bars; shaft of 1st primary white. In winter, no white spots on upper parts, throat grey brown without spots. Bill black, greyish at base below. Legs and feet pale olive green. Wing ♂ 119-127, ♀ 121-130. Tarsus 34-39. Bill 25-30.

Breeds.—Europe north of a line from N. France across to Urals, and across N. Asia; once or twice in Britain. Occurs throughout S. Europe on passage; occasional British Isles; winters in Africa, S. Asia, Australia. Nests usually on ground, but recorded by Popham as nesting in trees like "ochropus."

Totanus incanus brevipes Vieillot.

♂ ♀ summer. Above uniform brownish grey; beneath white with wavy bars of grey on sides of head, neck, chest and flanks. In winter, chin and abdomen are white, and breast is grey without bars. Bill black, yellowish at base below. Legs and feet ochre yellow. Wing 157-168. Tarsus 32-35. Bill 36-40 (H.).

An Asiatic form of "T. i. incanus," which breeds in Alaska. Of very rare occurrence in Europe, twice obtained in England.

Totanus hypoleucus (L.). COMMON SANDPIPER. *Fr.* Chevalier guignette ; *Ger.* Flussuferläufer ; *Ital.* Piro-piro piccolo. *Swed.* Drillsnäppa.

♂ ♀ summer. Above bronzy olive brown, with dark shaft streaks and bars, no white on rump or upper tail coverts ; inner secondaries mostly white, primaries with a patch of white on inner web, greater and median wing coverts with white tips ; beneath white, sides of breast brown with darker streaks, axillaries white ; tail rounded. In winter dark streaks are absent above, and also marks on sides of breast. Bill dark brown, lighter at base below. Legs and feet yellowish brown. Wing 102-115. Tarsus 23-26. Bill 22-27.

Breeds.—British Isles, Europe south to N. Spain and Portugal and N. Italy, probably N. Africa (Morocco to Tunis) ; also N. Asia. Winters throughout Africa, and S. Asia to Australia. Found by Van Someren nesting in Uganda.

Totanus macularius (L.). SPOTTED SANDPIPER.

♂ ♀ Resemble "hypoleucus" but inner secondaries brown with white bases and tips ; in summer underparts have large brown spots, which are absent in winter, when chest is ashy grey. Wing 98-110. Tarsus 24-26. Bill 22-25.

A North American species ; occasional in Europe. Casual in British Isles.

TEREKIA.

Bill strongly recurved and longer than tarsus ; outer and inner toes are united by membrane at their bases to middle toe.

Terekia cinerea (Güldenstädt). TEREK SANDPIPER.

♂ ♀ adult, summer. Above grey brown with dark streaks and blotches ; secondaries mostly white ; no white on rump ; beneath white with dark streaks on throat, foreneck, and chest ; axillaries white. In winter, dark streaks both above and below are very faint. Bill brownish black, yellowish at base. Legs and feet yellow. Wing 128-136. Tarsus 29-30. Bill 41-50.

Breeds.—Islands Gulf of Bothnia, Finland, N. Russia down to Orenburg and Samara ; also across Siberia. Occurs E. Europe on passage ; winters Africa and from S. Asia to Australia. Of rare occurrence in W. Europe, seven times obtained in England.

PHALAROPUS.

Toes half webbed, lobed as in Grebes. Aquatic, frequent sea-coasts and occasionally inland waters; good swimmers; nest on ground; eggs 4. ♀ larger than ♂ and latter incubates.

Phalaropus fulicarius (L.). GREY PHALAROPE. *Fr.* Phalarope gris; *Ger.* Platt Schnäbliger Wassertreter; *Ital.* Falaropo rosso; *Swed.* Brednäbbad Simsnäppa.

♀ summer. Crown black; upper parts black with buff margins; wing coverts grey, greater tipped white; upper tail coverts chestnut, streaked brown; beneath vinous chestnut, sides of head white, chin slaty. Bill strong and broad, dark yellow, tipped dark brown. Legs and feet pale bluish green, lobes mostly and inside of tarsus partly yellow. Wing 128-142. Tarsus 21-24. Bill 20-22. ♂ duller, sides of head red brown, crown streaked rufous. Wing 126-135. ♂ ♀ winter: upper parts blue grey, nape, hind neck and some feathers upper parts black; beneath white.

Breeds.—Circumpolar; Iceland, Spitzbergen, Nova Zembla, and possibly Kolguev, and in N. Asia and Arctic America to Greenland. Migrates; occurs on passage and in winter in Europe, seen chiefly on coasts or at sea as far as Liberia in Eastern Atlantic; frequent E. Asia, rare India; also found W. Atlantic and Pacific Coasts.

The Spitzbergen breeding bird has been separated as "P. f. jourdaini," on account of paler and narrower margins to feathers of upper parts in summer; further confirmation appears necessary.

Phalaropus lobatus (L.). RED-NECKED PHALAROPE. *Fr.* Phalarope cendré; *Ger.* Schmalschnäbliger Wassertreter; *Swed.* Smalnäbbad Simsnäppa.

♀ summer. Upper parts and sides of breast blue slate, streaked rufous on back; collar chestnut; underparts white. Bill slender and narrow, black. Legs and feet grey blue. Wing 114-119. Tarsus 22-24. Bill 21-23. ♂ Crown and upper parts dark brown streaked chestnut. Wing 105-115. Tarsus 19-21. ♂ ♀ winter: above grey with white tips, forehead and underparts white.

Breeds.—Ireland (very rare), Scottish Islands, Iceland, Faroes, Scandinavia, Russia south to Perm ; also N. Asia and N. America. Occurs on passage throughout Europe. Winters in Mediterranean Countries, S. Asia and C. and S. America ; more often found inland than Grey Phalarope.

HIMANTOPUS.

Bill straight ; legs very long ; outer and middle toes united at base by membrane, inner and middle very slightly ; no hind toe ; gregarious ; 4 eggs, in depression on dry mud or on herbage in swamps, are like Avocets'.

Himantopus himantopus himantopus (L.). BLACK-WINGED STILT. *Fr.* Échasse blanche ; *Ger.* Stelzenläufer ; *Ital.* Cavalier d'Italia.

♂ Back, scapulars and wings dark greenish black, tail pale grey, rest of plumage white. Bill black. Legs and feet pink. Irides carmine. Wing 230-250. Tarsus 120-141. Naked part of tibia 80-95. Bill 61-70. ♀ back and scapulars brown. Wing 218-236. Tarsus 109-116. Young : crown and hind neck grey, upper parts brown with rusty margins, secondaries and inner primaries with white tips.

Breeds.—S. France, Portugal and Spain, Sicily, Dalmatia, Rumania, Turkey, Hungary, and S. Russia ; exceptionally Holland and Belgium ; also Africa and Asia east to China. Migratory ; winters in Africa and S. Asia. Has occurred fairly often in European Countries outside breeding range, occasional in British Isles.

RECURVIROSTRA.

Bill long, slender, recurved ; legs long, feet webbed ; inhabit shores of lagoons and marshy places ; gregarious, especially in winter ; legs extended in flight ; eggs, 3 or 4, warm stone ochreous spotted and blotched with blackish.

Recurvirostra avosetta avosetta L. AVOCET. *Fr.* Avocette ; *Ger.* Säbelschnabel ; *Ital.* Avocetta ; *Swed.* Skärfläcka.

♂ ♀ Forehead, crown, and neck brownish black ; shoulders, primaries and most of upper tail coverts black, rest of plumage

white. Iris reddish brown. Bill black. Legs and feet grey blue. Wing 220-235. Tarsus 84-90. Naked tibia 50-57. Bill 84-91 (H.). In young black is replaced by brown.

Breeds.—Holland, Denmark, N. Shores of Mediterranean and Black Seas, probably Algeria and Morocco; also throughout Africa and C. Asia. Winters India and Africa, as well as in Mediterranean Basin. Of irregular occurrence on passage in British Isles, where it formerly nested.

LIMOSA.

Bill long, slightly recurved towards tip; toes webbed at base; frequent coasts or inland marshes; gregarious; eggs 4, pyriform, in depression, dull greenish indistinctly blotched with brown and olivaceous.

***Limosa lapponica lapponica* (L.). BAR-TAILED GODWIT.**
Fr. Barge rousse; *Ger.* Rostrote Uferschnepfe; *Ital.* Pittima minore; *Swed.* Myrspofv.

♂ ♀ summer. Head and hind neck chestnut, streaked brown, back and scapulars dark brown with chestnut streaks; lower back and rump white, sometimes with few brown marks; upper tail coverts white with brown bars; wing coverts and quills with white margins; tail barred white and brown; beneath chestnut, under wing coverts and axillaries white barred brown. Iris brown. Bill black, flesh colour at base. Legs and feet black. Wing 210-226. Tarsus 50-57. Bill 76-106. In winter: above dark brown with paler margins; beneath white, pale buffy brown on foreneck and chest with darker shaft streaks; in ♂ and young, tail beneath distinctly barred brown and white; in ♀ tail grey brown irregularly barred or marked with white.

Breeds.—N. Scandinavia, Finland, N. Russia; also N. Asia. Winters on Atlantic Coasts from Britain south to Senegal, Mediterranean Basin, and in W. Asia and N.E. Africa.

***Limosa limosa limosa* (L.). BLACK-TAILED GODWIT.**
Fr. Barge à queue noire; *Ger.* Schwarzschwänzige Uferschnepfe; *Ital.* Pittima; *Swed.* Rödspof.

♂ ♀ summer. Above not unlike "*lapponica*" but lower back uniform brown, upper tail coverts white and tail black, both without

bars, much more white on wing coverts and quills ; beneath rufous clay colour, barred black on breast ; abdomen white. ♂ Wing 202-212. Tarsus 73-83. Bill 80-110. ♀ larger. Wing 217-230. Tarsus 85-93. Bill to 126 (H.). In winter : above uniform grey brown, also throat and foreneck below, rest of underparts white. Young are like winter adults, but darker brown above, with rufous margins.

Breeds.—Iceland, Faroes, Belgium, Holland, Baltic Countries, Poland, Hungary, S. Russia north to Moscow, also W. Siberia. Winters British Isles (few), Mediterranean, N. Africa and W. Asia.

NUMENIUS.

Bill very long and much decurved ; legs long, slender, toes webbed at base ; frequent moors and uplands in breeding season, chiefly coasts in winter ; nest in depression in ground, eggs 4, pyriform, pale or dull olivaceous grey spotted and blotched with dark or light purplish brown.

Numenius arquatus arquatus (L.). CURLEW. *Fr.* Courlis ; *Ger.* Grosser Brachvogel ; *Ital.* Chiurlo ; *Swed.* Storspof.

♂ ♀ Above dark brown with paler margins, almost white on wing coverts and crown ; beneath paler brown streaked dark brown ; lower back and rump white, streaked brown in some, upper tail coverts and tail white with brown bars ; axillaries white barred brown. Bill black, reddish at base below. Legs and feet bluish grey. Wing 290-318. Tarsus 78-82. Bill 113-132.

Breeds.—Across Europe from British Isles (rare in S. England) and Belgium to Switzerland, Austria, Dobrudscha and Perm in Russia north almost to Arctic Circle. Winters throughout C. and S. Europe and Africa ; and in east to Persian Gulf. Occasional visitor to Iceland, Faroes, Azores, Madeira, Canaries.

N. arquatus lineatus Cuvier. Feather edges of upper parts lighter ; streaks on underparts narrower ; axillaries pure white or white with dark shaft streaks near tip. Bill sometimes much longer, even to 184 (H.).

Breeds.—Siberia, but limits to west not yet defined. Migrates ; occurs at Orenburg (E. Russia) on passage ; winters in S. Asia and Isles of Indian Ocean south to Madagascar ; has occurred in Abyssinia and even in W. Africa in winter.

Numenius tenuirostris Vieillot. SLENDER - BILLED CURLEW.

♂ ♀ Much like "arquatus" but smaller; crown pale brown streaked dark brown, lower back, rump, and upper tail coverts white, last with a few brown streaks; axillaries white; large brownish black pear-shaped spots on sides of breast. Bill brown, flesh coloured below at base. Legs and feet leaden-grey. Wing 250-258. Tarsus 64-69. Bill 75-89. ♀ generally the larger (H.).

Breeds.—W. Siberia. Winters in Mediterranean Basin west to Spain, south to Khartoum. Rare in Central Europe. Has occurred west to Holland, Belgium, France, and England.

Numenius phæopus phæopus L. WHIMBREL. *Ger.* Regen-brachvogel; *Ital.* Chiurletto; *Swed.* Småspöfv.

♂ ♀ Smaller than "arquatus"; crown not streaked, but dark brown with central buff stripe; eyebrow broad, white with fine brown streaks; axillaries white, barred brown. Bill black, pale brown below at base. Legs and feet bluish grey. Wing 235-256. Tarsus 57-62. Bill 70-88. ♀ usually the larger.

Breeds.—Iceland, Faroes, Shetlands, Scandinavia, Lapland, Finland, N. Russia south to Perm; also W. Siberia. Winters in Africa and S. Asia. Has occurred occasionally Jan Mayen, often S. Greenland, irregular Azores, Madeira, and Canaries. Some birds remain the year round in winter quarters, but have not been known to breed there.

Numenius hudsonicus Latham.

Resembles "phæopus" but no white on lower back, rump, or upper tail coverts, axillaries barred rufous and brown, inner webs of primaries barred white. Wing ♂ 231-257, ♀ 240-267 (Ridgway).

An American species; very rare in Europe, reported from S. Spain and Iceland.

Numenius borealis (Forster). ESKIMO CURLEW.

Resembles "hudsonicus" but no white bars on inner webs of primaries; under wing coverts and axillaries pale rufous barred dark brown. Wing 210-215. Bill 50-58. Tarsus 43-47 (H.).

An American species; also very rare in Europe, recorded as occurring about eight times in British Isles. Appears to be almost, if not quite, extinct.

SCOLOPAX.

Bill long; ear opening under anterior edge of orbit; legs feathered to heel-joint; nest in woods in depression, eggs 4, creamy buff or dark stone, marked and blotched with purplish grey and dark brown; nocturnal in habits; frequent damp wooded districts.

Scolopax rusticola rusticola L. WOODCOCK. *Fr.* Bécasse; *Ger.* Waldschnepfe; *Ital.* Beccaccia; *Swed.* Morkulla.

♂ ♀ Above chestnut, mottled and barred with black or grey; beneath buff barred brown. Bill brown, tip darker. Legs and feet greyish flesh. Wing 185-205. Tarsus 36-38. Bill 69-80.

Breeds.—British Isles; Continental Europe from 70° in Scandinavia and 66° in Russia south to Pyrenees and N. Balkans; and across N. Asia. Winters in Mediterranean Basin, N. Africa, and S. Asia to China and Japan. Resident Madeira, Canaries, and Azores, and at all seasons found in British Isles.

GALLINAGO.

Differs from "Scolopax" in eye being less displaced backwards, ear opening below middle of orbit; legs feathered to lower part of tibia; frequent damp districts; largely nocturnal feeders; eggs in a depression in ground, pyriform, greenish buff, spotted and blotched with dull purplish grey and dark umber brown.

Gallinago gallinago gallinago (L.). COMMON SNIPE. *Fr.* Bécassine; *Ger.* Gemeine Sumpfschnepfe; *Ital.* Beccacino reale; *Swed.* Enkelbeckasin.

♂ ♀ Above black mottled and barred rufous with broad longitudinal streaks of reddish buff on outer webs of scapulars; crown black with three reddish buff stripes; tail 14 feathers, basal part black, terminal part red brown with black anteapical band and buff tips; beneath white, throat, neck and breast buff streaked brown; flanks buff barred brown. There is considerable variation, some being greyer, others more rufous, and a melanism ("G. sabinii") occurs in British Isles. Bill blackish brown, lighter below. Legs and feet greyish green. Wing 123-140. ♀ usually the larger. Tarsus 31-34. Bill 63-70.

Breeds.—British Isles ; Continental Europe from north of Arctic Circle in Scandinavia and Russia south to Pyrenees, N. Italy, Montenegro, and Caucasus ; also in W. Siberia. In winter occurs in British Isles, and throughout S. Europe and N. Africa ; Azores, Madeira, and Canaries ; and S. and tropical Africa and S. Asia.

G. gallinago færøensis (Brehm). Browner above and more rusty red in spring and summer, especially on throat and upper breast ; usually both dark stripes on lower throat absent or indistinct ; edges of scapulars narrower and redder.

Breeds.—Iceland and Faroes (in latter islands typical race occurs in autumn). Resident or partly migratory ; has been found in Ireland, Cornwall, St Kilda and Tiree.

Gallinago media (Latham). GREAT SNIPE. *Fr.* Grande Bécassine ; *Ger.* Grosse Sumpfschnepfe ; *Ital.* Croccolone ; *Swed.* Dubbel Beckasin.

♂ ♀ Like “gallinago” but tail of 16 feathers, wing coverts white tipped, four outer tail feathers white with slight black markings, underparts more deeply barred. Bill dull flesh at base, darkening towards tip. Legs and feet dull flesh. Larger. Wing 136-147. Tarsus 36-39. Bill 62-68. Young have outer tail feathers tinged rusty and barred black.

Breeds.—Scandinavia, Lapland, Denmark, N. Germany (few), Russia to Volga and Bessarabia, and across N. Asia to Yenisei. Migrates ; occurs on passage throughout Europe, uncommon in Britain, occasional Madeira and Canaries, scarce in N.W. Africa. Winters in Africa south to Cape Colony and in S.W. Asia.

LIMNOCRYPTES.

Like “Gallinago” ; shorter secondaries pointed ; syrinx highly specialised (Pycraft).

Limnocryptes gallinula (L.). JACK SNIPE. *Fr.* Bécassine sourde ; *Ger.* Kleine Bekassine ; *Ital.* Frullino ; *Swed.* Halfenkel-Beckasin.

♂ ♀ Smaller than “gallinago,” distinguished by purple and green gloss on upper parts ; tail 12 feathers ; centre of crown blackish and on each side broad brownish yellow stripe. Bill yellowish flesh with black tip. Legs and feet yellowish grey. Wing 108-115. Tarsus 23-25. Bill 39-43.

Breeds.—Lapland, Finland, N. Germany (few), Baltic Provinces, N. Poland, Russia south to Perm and Orel; also N. Asia. Migrates through Europe and Asia. Winters W. and S. Europe, N. Africa (Canaries to Egypt), also E. Africa, and S. Asia to China and Japan.

ROSTRATULA.

Habits Rail-like; bill decurved at tip; wing much rounded; eye and ear normal in position. ♀ larger and more richly coloured than ♂.

Rostratula benghalensis benghalensis L. PAINTED SNIPE.

♀ Throat and neck chestnut, white patch round and behind eye; crown stripe reddish buff; upper parts bronzy green with some cinnamon stripes; quills grey inner web and cinnamon spots outer web; chest black, abdomen white. Bill blackish, olive green at base below. Legs and feet olive brown. ♂ neck and throat dull white; quills grey on inner, bronzy olive green on outer web, barred and spotted ochreous; patch round and behind eye ochreous. Wing ♂ 127-137, ♀ 131-142. Tarsus 41-44. Bill 41-46 (H.). Young are like adult ♂.

Resident.—Nile Valley to Fayoum and Delta. Widely distributed in Africa and Asia.

HÆMATOPUS.

Bill longer than head, flattened sideways, bent slightly up; no hind toe; toes united by membrane at base; frequent sea-coasts and sometimes inland waters; eggs in a depression on rock, pebbles, or sand, usually 3, stone buff with purple shell spots and blackish brown spots and blotches.

Hæmatopus ostralegus ostralegus L. OYSTER-CATCHER. *Fr.* Huitrier pie; *Ger.* Austernfischer; *Ital.* Beccaccia di mare; *Swed.* Strandskata.

♂ ♀ Black; small patch under eye, upper tail coverts, greater and tips of median wing coverts white; quills partially white, tail basal portion white, apical black; breast and abdomen white. Bill and eyelids vermilion. Irides crimson. Legs and feet dull crimson. Wing 245-273. Tarsus 44-53. Bill 72-75.

Breeds.—W. Coast of Europe from N.W. Spain north to British Isles, Faroes, Iceland, White and Baltic Seas ; also Macedonia, Asia Minor, and sometimes Black and Caspian Seas. Winters Iceland (few), British Isles (many), but principally on Mediterranean Coasts, W. Coast of Morocco, shores of Red Sea, and east to India, and south to C. Africa.

Hæmatopus niger meade-waldoi Bannerman.

♂ ♀ Entirely black, except hidden bases of primaries, which are white. Iris carmine red. Bill orange red. Legs and feet red. Wing ♂ 260-263, ♀ 252-258. Tarsus 53. Bill ♂ 73-77, ♂ 79-81 (H.).

Resident.—Fuerteventura, Lanzarote, Graciosa (E. Canaries).

The typical race "H. n. niger" is S. African.

LARI.

Gulls, Terns, Skuas, and Scissor-bills. Nostrils slit-like; bill strong and horny; oil gland feathered; 10 visible primaries; 12 tail feathers; fore toes webbed; young covered with down when hatched.

LARIDÆ.

Bill without cere, tip decurved (Gulls), straight and tapering (Terns and Scissor-bills); sternum with two notches on each side; claws weak.

HYDROCHELIDON.

Marsh Terns; tail less deeply forked than in "Sterna," and toes longer and only half webbed; affect inland marshes more than coast; nest in marshes on ground or on floating herbage; eggs 3, ochreous clay or olivaceous, closely blotched and spotted with purplish grey and blackish brown.

Hydrochelidon nigra nigra (L.). BLACK TERN. *Fr.* Guifette noire; *Ger.* Schwarze Seeschwalbe; *Ital.* Mignattino; *Swed.* Svart-Tärna.

♂ summer. Above grey slate; crown, face and nape black;

beneath slaty black, under tail coverts white, under wing coverts and axillaries pale grey. Bill black. Legs and feet reddish brown. In winter: above paler, forehead white, crown browner; beneath greyish white. ♀ like ♂ but underparts in summer slaty grey. Wing ♂ ♀ 208-222. Tarsus 15-17. Bill 24-28. Young: mottled with brown and white with some black on sides of chest. Bill brownish black. Legs and feet brownish flesh.

Breeds.—From S. Sweden, Gothland and Öland Islands and Russia from L. Ladoga and Perm south throughout Europe to S. Spain, Balearic Islands, N. Italy, Rumania, Bulgaria, and S. Russia, regularly in Denmark and Holland, rare in France; also in W. Asia. Migrates; occurs British Isles on passage, and N. Africa (Morocco to Egypt). Winters in tropical Africa.

Hydrochelidon leucoptera (Temminck). WHITE-WINGED BLACK TERN.

♂ ♀ summer. Head, neck, back, scapulars, and underparts black; lesser wing coverts and edge of wing white, greater wing coverts and shorter primaries pale grey; upper tail coverts, vent, under tail coverts, and tail white (in ♀ tail grey except base and outer feathers, which are white), under wing coverts and axillaries black. Bill, legs and feet red. Iris dark brown. In winter: above grey, forehead, hind collar, and underparts white; crown mottled black; tail grey above, paler below, under wing coverts and axillaries white. Wing ♂ 208-225, ♀ 202-215. Tarsus 18-22. Bill 21-25. Young like adult in winter, but crown, back, and scapulars brown or grey mottled with brown.

Breeds.—Russia north to Pskov and Esthonia, Galicia, Hungary; possibly S. Italy, Sicily, Egypt, and Algeria; and widely in N. Asia. Migrates; occurs occasionally in W. Europe on passage, even as far west as Britain; commoner in Morocco, Algeria, and Tunis. Winters in Africa south to Cape Colony, and from S. Asia to Australia.

Hydrochelidon leucopareia leucopareia (Temminck). WHISKERED TERN. *Fr.* Hirondelle de mer moustas; *Ger.* Weissbärtige Seeschwalbe; *Ital.* Mignattino bigio.

♂ ♀ summer. Crown and nape black, upper parts slate grey; beneath, face and chin white, white streak from gape to nape, throat and breast pale slate, abdomen sooty black, under tail

coverts, under wing coverts and axillaries white. Bill red. Legs and feet vermilion. In winter crown and nape are white streaked with black, and underparts white. Wing ♂ 244-255, ♀ 234-240. Tarsus 22-24. Bill 29-31. Young are like winter adults, but crown is brown freckled with white, scapulars and secondaries mottled, with dark centres and buff margins. Bill and legs brown.

Breeds.—Portugal, Spain, S. France (Camargue), Hungary, Danube Valley, Dobrudscha, S. Russia north to S. Poland and Volga Valley; N. Africa (Morocco to Egypt); also W. Asia. Migrates. Winters in Africa. Of occasional occurrence in N. Central and N. Western Europe. Casual in British Isles.

STERNA.

Terns with short legs, webbed feet, long wings, and forked tail; flight Swallow-like; usually met with in small parties on sea-coast, hovering or plunging for fish or picking small crustaceans or insects from the surface; breed generally in colonies on sea-coasts, islands, or inland lakes; eggs in depression near water, white, buffy ochreous, or dark buff, blotched or spotted with various shades of brown, black and violet grey.

Sterna anglica anglica Montagu. GULL-BILLED TERN.
Fr. Sterne hansel; *Ger.* Lachseeschwalbe; *Ital.* Beccapesci inglese.

♂ ♀ summer. Crown and nape glossy black; upper parts including tail pale blue grey; quills dark on inner side of inner web and tip of both webs; beneath white; under wing coverts and axillaries white. Bill, legs and feet black. Wing 297-328. Tarsus 33-35. Bill 34-37. In winter, crown is white occasionally streaked black, and in front of eye is a black spot. Young: like winter adults but with upper parts marked with brown arrow-headed tips to feathers and crown more streaked; bill, legs and feet reddish brown.

Breeds.—Small colony Jutland Coast, S. Spain, Portugal, S. France, S. Bavaria, Hungary, Greece, Black Sea Coasts, Caspian Coasts north to Urals, Tunis, Algeria, Morocco, Egypt,

also Asia Minor and through C. Asia to Mongolia. Migrates; winters tropical Africa, chiefly north and east; and S. Asia to China and Malay Archipelago. Of rare occurrence in British Isles.

Sterna caspia caspia Pallas. CASPIAN TERN. *Ger.* Raubseeschwalbe; *Ital.* Rondine di mare maggiore.

♂ ♀ summer. Above blue grey, crown and nape black; hind neck and underparts white. Bill massive, coral red, black at tip. Legs and feet black. In winter, crown is white streaked black. Wing 400-439. Tarsus 43-45. Bill 62-74 (H.). Young are like winter adults, but upper parts brown spotted, and bill is orange red, dark brown at tip.

Breeds.—Sylt on Coast of Schleswig, Coasts of Sweden and Finland, Sardinia, E. Coast Adriatic, S. Spain, Tunis Coast, Coasts of Black and Caspian Seas, S. Russian salt steppes, and also widely in Asia, Africa and N. America. Of occasional occurrence outside its breeding range in Europe, north to Britain and Faroes. Migrates; occurs in winter in Africa, S. Asia, and in America south to Mexico.

Sterna bengalensis par (Mathews). ALLIED TERN. ("Sterna media" auct.).

♂ ♀ Above clear grey, top of head black, occasionally a thin white line on forehead; outer tail feathers white; beneath white. Bill yellow. Legs and toes black, soles yellowish. In winter, top of head is black spotted white, and forehead white. Wing 293-316. Bill 51-57 (H.).

Breeds.—Coasts of Tunis, Syria, and Red Sea. Has occurred on Coasts of N. Morocco, S. Spain, Sicily, Egypt, and Coast of E. Africa.

The typical race "S. b. bengalensis" ranges from Persian Gulf to Malay Archipelago.

Sterna maxima albididorsalis Hartert. ROYAL TERN.

♂ ♀ summer. Above pale grey, long and pointed nuchal feathers and crown black; beneath white. Bill orange red. Legs and feet blackish, soles orange yellow. In winter, crown white with few black spots, occiput and nape black with white edges. Wing 355-366. Tarsus 31-34. Bill 62-72. Fork of tail 75-85 (H.).

Breeds.—From Straits of Gibraltar south along Morocco Coast and West Coast of Africa to Benguela.

The typical race "*S. m. maxima*" is American.

Sterna sandvicensis sandvicensis Latham. SANDWICH TERN. *Fr.* Hironnelle de mer caugek ; *Ger.* Brandseeschwalbe ; *Ital.* Beccapesci.

♂ ♀ summer. Above pale blue grey, crown and nape glossy black, nape feathers long and pointed, tail white ; beneath white with faint rosy tinge ; inner web of 1st primary white, and next shaft a dark grey stripe, which in the middle is about as broad as outer web, the white extends to the tip. Bill black, tip for about 10 m.m. yellow. Legs and feet black. In winter, crown is white streaked black and there is a dark patch in front of eye. Wing 288-318. Tarsus 25-27. Fork of tail 68-80. Bill 51-59. In young : crown and nape freckled black and white, and upper parts are pale grey barred black.

Breeds.—British Isles, Denmark, W. German Coast, Holland, Channel Islands, Spain, Sardinia, S. Italy, Sicily, Tunis, Black and Caspian Seas. Migrates ; occurs in winter N. African Coast, Canaries (rare), and West Coast of Africa to Cape, also in Red Sea, Arabian Coasts and S. Asia to India.

Sterna hirundo hirundo L. COMMON TERN. *Fr.* Hironnelle de mer Pierre-Garin ; *Ger.* Flusseeschwalbe ; *Ital.* Rondine di mare ; *Swed.* Fisktärna.

♂ ♀ summer. Above pale blue grey, upper tail coverts and tail white, outer webs of tail streamers dark grey ; crown and nape black ; beneath white, tinged pinkish grey ; chin, cheeks, under tail and wing coverts and axillaries white ; shafts of primaries white, 1st primary outer web black, inner web white and next shaft a dark grey stripe, in the middle of the feather 4-5 m.m. broad. Bill coral red, blackish at tip. Legs and feet coral red. In winter, forehead is white, crown black with white streaks and in front of eye a dark patch, underparts white. Wing 250-270. Tarsus 19-21. Fork of tail 70-90. Bill 30-39. Young : above grey mottled and barred pale brown with buff tips, and on lesser wing coverts a greyish brown band ; beneath white.

Breeds.—British Isles north to Shetlands; Azores, Madeira, Canaries; Continental Europe from N. Cape (but only rarely above Arctic Circle) to Mediterranean, Black and Caspian Seas; N.W. Africa, Palestine, Asia Minor and through Asia to Mongolia; also widely in N. America. Migrates; winters in Africa south to Cape, S. Asia, and in America south to north shores of S. America.

Sterna paradisæa Brünnich. ARCTIC TERN. *Fr.* Hirondelle de mer paradis; *Ger.* Küstenseeschwalbe; *Ital.* Rondine di mare coda lunga; *Swed.* Rödnäbbad Tärna.

♂ ♀ Very like "hirundo" but distinguished as follows: bill red without dark tip; tarsus considerably shorter; outer tail feathers longer; underparts darker grey; dark grey stripe on inner web of 1st primary narrower, 2-3 m.m. broad in middle, and paler, less contrasted. Wing 258-285. Tarsus 15-17. Fork of tail 90-120. Bill 28-33.

Breeds.—Circumpolar; Spitzbergen, Franz Joseph Land, Iceland, Faroes, British Isles, Norway, Sweden, Finland, Lapland, N. Russia south to Dvina, and Coasts of North Sea south to Holland; also N. Siberia, Arctic America, and Greenland. Migrates; occurs in other parts of Europe on passage. Appears in our winter in Antarctic Seas, even to limit of open water, but not breeding there.

Sterna dougalli dougalli Montagu. ROSEATE TERN. *Ger.* Paradiesseeschwalbe.

♂ ♀ summer. Above blue grey; forehead, crown, and nape black; beneath rosy white; outer tail feathers much lengthened; inner part of inner web of outer primaries white to tip. Bill slender, black, orange at base. Legs and feet orange red. In winter, forehead white and crown less glossy, mottled white, underparts white, bill black. Wing 226-240. Tarsus 19-21. Fork of tail 110-135. Bill 35-39. Young are like winter adults, but with dark grey band on lesser wing coverts and central part of secondaries dark grey.

Breeds.—British Isles (very local), Jutland and N. Friesland Coasts (few), Coast of Brittany, Tunis, Madeira, and in greater numbers on American Atlantic Coasts. Migrates; occurs in winter on Coasts of Africa; occasionally wanders outside its breeding grounds in Europe. Birds from Indian Ocean and Australia have been separated as subspecies.

Sterna fuscata fuscata L. SOOTY TERN.

♂ ♀ Above black, forehead and underparts white, outer tail feather white. Bill, legs and feet black. Wing 275-305. Tarsus 22-25. Fork of tail 100. Bill 39-46 (H.). In winter, crown is spotted white. Young are blackish brown with white tips on upper parts; beneath paler brown, vent and under tail coverts slate. Bill, legs and feet brown.

Breeds.—W. Indies and S. Atlantic. Occasionally occurs in European Seas; recorded Azores, Italy, France, Germany, British Isles.

Sterna minuta minuta L. LITTLE TERN. *Fr.* Sterne naine; *Ger.* Zwergseeschwalbe; *Ital.* Fraticello; *Swed.* Småtärna.

♂ ♀ summer. Above blue grey, rump, upper tail coverts, and tail almost white; crown, nape, and lores black; forehead white, about 10 m.m. broad; beneath white; two outer primaries with their shafts (sometimes third also) darker than the others. Bill yellow, at tip black. Legs and feet light orange. In winter, more white on forehead, and streamers of tail shorter. Wing 173-180. Tarsus 15-17. Bill 27-31. Young: crown striped black, back buffish grey marked with blackish crescents, tail except outer tail feathers marked with black.

Breeds.—Europe generally from Petrograd in Russia, S. Sweden, Germany, and British Isles south to Mediterranean, Black and Caspian Seas; N. Africa; and also in W. Asia to N.W. India. Migrates; occurs in winter in African and Indian Seas. The limits of the distribution of this form and of "*S. m. saundersi*" are not yet defined. The latter has the three outer primaries white and black, and bill and feet more brownish yellow. It has been reported from Egypt.

ANOUS.

Tail wedge-shaped and slightly bifurcated, 3rd outer feather longest; oceanic birds.

Anous stolidus stolidus (L.). NODDY TERN.

♂ ♀ Forehead whitish, crown pale grey, hind neck ashy grey, upper parts smoky brown tinged grey, tail and wings almost black; below smoky brown, throat, under wing coverts, and axillaries grey. Bill black. Legs and feet reddish brown. Wing 260-286. Tarsus 25-27. Bill 43-46.

Breeds.—Coasts of Gulf of Mexico and S. Atlantic Islands. Of casual occurrence in European waters, recorded France and Britain.

XEMA.

Tail forked; said to resemble Black-headed Gull in habits; eggs in a depression in moss, dull brownish olive blotched, chiefly at larger end, with distinct dull brown.

Xema sabinii (Sabine). SABINE'S GULL.

♂ ♀ Head, nape and upper throat dark slate separated by a narrow black collar from white lower throat and hind neck; upper parts pale slate; outer wing coverts, inner primaries, upper tail coverts, tail and underparts white; outer primaries black with white tips. Bill black, tipped yellow. Inside of mouth and eye-rim vermilion. Legs and feet blackish grey. In winter, head and neck white streaked grey. Wing 270-290. Tarsus 30-36. Bill 24-28. ♀ generally the smaller. Young: forehead, throat and underparts white; above grey brown buff tipped; outer wing coverts and inner primaries white, tip of tail brown.

Breeds.—As far as is known, Spitzbergen, N.E. Siberia (Kolyma district) and Arctic N. America. Circumpolar in distribution, has been met with Franz Joseph Land, Greenland; occurs in winter occasionally in Europe, on Atlantic and North Sea Coasts.

RHODOSTETHIA.

Tail wedge-shaped; bill small, shorter than head.

Rhodostethia rosea (Macgillivray). ROSS'S GULL.

♂ ♀ summer. Above pale grey, tail white; head and underparts white with bright rosy tinge, collar and outer web 1st primary black. Bill black. Eye-rim vermilion. Legs and feet red. In winter, there is no black collar, and top of head is greyish. Wing 260-266. Tarsus 30-32. Bill 18-19 (H.). Young: white; spot behind ear, shoulders, inner wing coverts, tips of primaries and end of tail brown; legs and feet brown.

Breeds.—Only known locality so far is in N. Siberia (Kolyma Delta). Has occurred all over Arctic regions; is a rare winter visitor to Europe, recorded Faroes, Heligoland, Yorkshire, France and Sardinia.

LARUS.

Bill strong, compressed sideways, upper mandible hooked at tip and reaching beyond lower; nostrils longitudinal; tail square; hind toe and claw well marked; sexes alike, young different from adults; nest usually bulky, on cliffs or on ground; eggs 2-4, variable, some dull white in ground colour, others dull olivaceous or ochreous, spotted and blotched with different shades of brown.

Larus marinus L. GREAT BLACK-BACKED GULL. *Fr.* Goéland à manteau noir; *Ger.* Mantelmöwe; *Ital.* Mugnaiaccio; *Swed.* Hafstrut.

♂ ♀ Back, scapulars and wing coverts slaty black; head, hind neck, tail, tips of scapulars and underparts white; primaries black, 1st primary with white tip and grey inner web, white tip about 60 m.m. long; 2nd primary has white tip crossed by a black bar; other primaries are white tipped. Bill massive, yellow, lower mandible orange red at angle. Eye-rim vermilion, iris brown. Legs and feet pale flesh colour. Wing 465-515. Tarsus 71-79. Bill 52-63. In winter, head and neck are streaked brownish grey. Young: above light brown mottled with white; head and neck streaked; breast and abdomen dull buffy white; bill horn colour. Do not attain maturity till fourth year.

Breeds.—Greenland, Iceland, Faroes, N. Russia, Baltic Provinces, Sweden, Gothland, Norway, British Isles and occasionally N.W. France; also in east North America. Partly resident; wanders in winter south to Mediterranean, Caspian and Black Seas, Canaries and Azores, and in America south to Florida and Cuba.

Larus argentatus argentatus Pontoppidan. HERRING GULL. *Fr.* Goéland argenté; *Ger.* Silbermöwe; *Swed.* Gråtrut.

♂ ♀ Head, neck, tips of scapulars, tail and underparts white; mantle pale blue grey; primaries and secondaries white tipped, 1st primary black with grey inner edge, in the next five black diminishes and grey increases; 1st and 2nd primaries in addition have white patches or "mirrors" near tip; inner primaries are grey like secondaries. Bill pale yellow, with orange red patch on lower mandible at angle. Eye-rim yellow, iris pale yellow.

Legs and feet pale flesh. In winter, crown and hind neck are streaked pale brown. Wing 395-445. Tarsus 58-66. Bill 41-55. Young: light brown mottled white, primaries uniform brown, tail white barred brown, bill black, legs slaty grey, often not distinguishable from young of "*L. fuscus*"; maturity is attained in fourth year.

Breeds.—Faroes, British Isles, N. Europe from White Sea, N. Finmark and N. Norway south to Baltic and North Sea Coasts and West Coast of France; also Greenland and Arctic N. America; (not in Iceland). To a great extent resident, some wander in winter to Mediterranean, Caspian and Black Seas, and in America south to Gulf of Mexico.

L. argentatus cachinnans Pallas. Like typical "*argentatus*" but differs in mantle being slightly darker, eye-rim orange red, legs and feet flesh coloured in young, bright yellow in adult, bill brighter, and in winter head and hind neck being white unstreaked (rarely faintly streaked).

Breeds.—Azores, Canaries, Madeira, Atlantic Coasts of Morocco, Spain and Portugal, Mediterranean Coasts from Gibraltar to Dardanelles and Egypt, Danube mouth, Black and Caspian Seas, S. Russia on lower Volga and north to Orenburg, and in C. Asia to Baikal Sea. Mostly resident. Occurs in winter West Coast of Africa south to Cape de Verde and on east side to Arabia, Persia and India. Rare in Britain.

***Larus fuscus fuscus* L.** LESSER BLACK-BACKED GULL.
Ger. Heringsmöwe; *Ital.* Zafferano; *Swed.* Sillmåse.

♂ ♀ summer. Head, hind neck, tips of scapulars and secondaries, upper tail coverts, tail and underparts white; upper parts dark slate, becoming browner in worn plumage; primaries black with white tips, on the 1st about 15-20 m.m. in extent, on the 2nd interrupted and smaller with a "mirror" inside the tip. In winter, head and neck streaked dark brown. Bill yellow, red at angle of lower mandible. Eye-rim orange red. Iris pale yellow. Legs and feet yellow. Wing 415-450. Tarsus 58-66. Bill 47-54 (H.). Young are somewhat darker than young of "*argentatus*" but often not distinguishable.

Breeds.—Scandinavia and N. Russia from Murman Coast and White Sea south to Baltic Provinces and Islands in Baltic but

not east of Northern Dvina ; possibly also in N. Italy. Some winter in Baltic, majority apparently migrate due south overland, being rare to westward ; occur abundantly in E. Mediterranean in winter, and at same season in Red Sea, Persian Gulf and E. Africa. Have been reported off British Coasts and Coasts of Spain in autumn on passage and some probably winter in Western Mediterranean along with the lighter-coloured Western race.

L. fuscus affinis Reinhardt. ♂ ♀ Like typical "fuscus" but back slaty grey instead of slaty black, and never become browner in worn plumage. Wing 390-445. Tarsus 58-66. Bill 42-53. ♂ usually the larger.

Breeds.—Faroes, British Isles, Channel Islands, W. France, Moorish Coast, Canaries, and Azores. Largely migratory, some winter in Britain, majority pass south to Coasts of Spain, extreme W. Mediterranean, Canaries, Azores, and W. Coast of Africa south to Niger mouth.

The breeding bird from the Azores has recently been separated as "*L. fuscus atlantis*" Dwight on account of its paler grey back.

L. fuscus taimyrensis Buturlin. In plumage like "affinis" but larger. Wing 425-460, mostly 440-460 (H.).

Breeds.—From Lower Dvina and Petchora in N. Russia and Kolguev Island east through Siberia to Taimyr Peninsula. Recorded from Nova Zembla and Waigatz. Occurs in winter on W. Coast of India, and Coasts of Arabia and E. Africa.

Larus canus canus L. COMMON GULL. *Fr.* Goéland cendré ; *Ger.* Sturmmöwe ; *Ital.* Gaviania ; *Swed.* Fiskmåse.

♂ ♀ summer. Head, neck, tips of scapulars and secondaries, tail, and underparts white ; mantle pale blue grey ; primaries as in "argentatus," white tip of 1st primary 50-60 m.m. long. Bill, legs and feet greenish yellow. Eye-rim vermilion. Iris dark brown. In winter, head and neck are streaked grey brown. Wing 325-360. Tarsus 47-52. Bill 29-33. Young are distinguished from young "argentatus" by small size and white tail with a subterminal brown band about 50 m.m. wide.

Breeds.—Scotland, Ireland, England (very rarely), Frisian Islands, Jutland, Scandinavia, N. Germany, Baltic Provinces, Russia from Kola Peninsula south to Don, Caucasus, and

Caspian ; also in Siberia to the Yenisei. Partly migratory ; many winter in Britain ; occurs in winter on Coasts of C. and S. Europe to Mediterranean ; occasional in Canaries, Egypt, and Persian Gulf.

Larus hyperboreus Gunnerus. GLAUCOUS GULL. *Ger.* Eismöwe ; *Swed.* Hvit-trut.

♂ ♀ summer. Above very pale bluish grey ; head, neck, tips of scapulars, tail coverts, tail and underparts white ; no black in wing, quills very pale grey, outer web 1st primary white. Bill yellow, at angle of lower mandible red. Eye-rim orange red, iris yellow. Legs and feet pinkish flesh. In winter, head and neck are streaked brown. Wing ♂ 450-480, ♀ 425-455. Tarsus 65-76. Bill ♂ 53-57, ♀ 48-55. Young : above dull white barred with pale brown ; beneath pale greyish brown ; no black on quills, bill blackish brown. In second year, creamy white with faint mottlings of light brown ; adult plumage is attained in fourth year.

Breeds.—Circumpolar ; Greenland, Spitzbergen, Jan Mayen, Franz Joseph Land, Iceland, Kolguev, Waigatz, Nova Zembla, Coasts of N. Norway and N. Russia ; and Arctic Asia and America. In winter, occurs in small numbers on W. European Coasts south to E. Prussia, France (seldom), N.W. Spain (rare) ; occasionally to Mediterranean, Black and Caspian Seas ; and similarly in E. Asia and E. and W. Coasts of N. America.

Larus leucopterus Faber. ICELAND GULL.

♂ ♀ Like "hyperboreus" but smaller ; stages of plumage similar. Wing 395-430. Tarsus 56-64. Bill 40-44. Bill greenish yellow, at angle lower mandible a red patch. Iris buffy yellow. Legs and feet pale leaden pinkish.

Breeds.—Arctic America (Alaska to Greenland), Jan Mayen, Nova Zembla (once recorded). Occurs in winter regularly in Iceland, fairly often N. British Coasts and Coasts of North Sea, rarer in W. France and Baltic Sea ; and in America south to New York State and Great Lakes.

Larus audouini Payraudeau. AUDOUIN'S GULL. *Ital.* Gabbiano corso.

♂ ♀ summer. Head, neck, tail, and underparts white ;

mantle and central upper tail coverts very pale grey ; under wing coverts and flanks light grey, axillaries white ; primaries with white tips, 1st primary with white "mirror." Eye-rim red. Iris yellowish brown. Bill coral red, tip yellow, black band at angle. Legs and feet olive green. Wing 395-415. Tarsus 55-60. Bill 45-51 (H.). In winter, head and neck are striped dark grey.

Resident.—Mediterranean from Gibraltar east to the Levant. Breeds, Columbretes (Spain), Sardinia, Cyclades, Syrian Coast. Has been reported on Sea of Galilee and near Dead Sea in winter and also on Egyptian Coast.

Larus gelastes Keyserling and Blasius. SLENDER-BILLED GULL. *Ital.* Gabbiano roseo.

♂ ♀ summer. Head, neck, tail, and underparts white, last with rosy tinge ; back, scapulars, upper and under wing coverts, axillaries, secondaries, and inner primaries light grey ; 1st primary white with tip and most of outer web black ; 2nd, 3rd, and 4th have outer web white and inner web brownish grey, next three are grey and all have black tips. Bill long, slender, red. Eye-rim, legs and feet red. Iris white. In winter, the rosy tinge is less and sides of head are spotted grey. Wing 312-320. Tarsus 48-53. Bill 39-42 (H.). Young are like young of "*L. ridibundus*" but legs and feet are yellow and bill is yellow with black tip.

Breeds.—S. Spain, Dobrudscha, Sea of Azov, Khirghiz Steppes, Lower Egypt, and in Asia Minor and Persia. Outside breeding season has been met with over entire Mediterranean, and down W. Coast of Africa to within the tropics ; also Black and Caspian Seas, Arabia, and Persian Gulf to India.

Larus ichthyaëtus Pallas. GREAT BLACK-HEADED GULL.

♂ ♀ summer. Head, throat, and foreneck black ; hind neck, rump, tail and underparts white ; back, scapulars, upper wing coverts and secondaries light grey, the last with white tips ; primaries white, the 1st with outer web and a bar on inner web near tip black, the next five with subterminal black bars. Bill orange, in front of angle a black band. Legs and feet yellow. Wing ♂ 490-520, ♀ 450-480. Tarsus ♂ 81-86, ♀ 67-71. Bill ♂ 63-71, ♀ 51-60. In winter, head white slightly streaked brownish black ; the white inner webs of primaries distinguish

it then from "L. a. cachinnans." Young : primaries brown with white spots near tips of inner webs and on both webs of 1st, tail white with dark brown band.

Breeds.—S. Russia (Sea of Azov, Lakes of Sarpa Steppes), Caspian Sea ; and in W. and C. Asia. Migrates ; occurs on passage and in winter Cyprus, Syria, and Egypt, and in S.W. Asia to India. Of very rare occurrence in C. and W. Europe, twice recorded in England.

Larus melanocephalus Temminck. ADRIATIC GULL.
Ital. Gabbiano corallino.

♂ ♀ summer. Head, throat, and foreneck black ; above and below eye a narrow white patch ; mantle very pale grey ; primaries white, inclined to greyish towards the base, outer web of 1st primary black for $\frac{3}{4}$ of its length ; tail, outer secondaries, lower neck, and underparts white. Bill red, stouter than in "ridibundus." Legs and feet red. Iris brown. In winter, head is white striped ashy grey. Wing 296-318 (H.). Tarsus about 50. Bill 35. Young : brown above with white edges to feathers, primaries brown with greater part of inner web white, tail with a terminal black band, bill black, yellowish towards base.

Breeds.—Black Sea and E. Mediterranean (Greece and Asia Minor) and possibly Spain. Resident, chiefly met with in E. Mediterranean but also occurs on Spanish and Portuguese Coasts ; occasional in Adriatic, and rarely further north in Europe to N.W. France and Britain.

Larus philadelphia (Ord). BONAPARTE'S GULL.

♂ ♀ summer. Head dark slaty grey, round eye a white ring interrupted in front ; back, scapulars, and upper wing coverts pale bluish grey ; rest of plumage white, underparts tinged rosy ; 1st primary black on outer web towards point, and for 15 m.m. at tip, rest white ; 2nd primary white with black tip ; 3rd and 4th grey on inner web. In winter, head and neck are white, spotted dark grey on crown and nape, and with slaty grey patch behind ear. Bill black. Legs and feet orange red. Wing 267-274 (H.).

Breeds.—Arctic America. Rarely occurs in W. Europe, recorded once Heligoland, six to seven times British Isles.

Larus minutus Pallas. LITTLE GULL. *Ger.* Zwergmöwe ; *Ital.* Gabbianello ; *Swed.* Dvärgmås.

♂ ♀ summer. Head and throat black ; neck, upper back, tail, and underparts white, rosy tinged on breast and abdomen ; scapulars, lower back, and upper wing coverts light grey ; under wing coverts slaty grey, primaries above light grey with white tips, below slaty grey with tips white. Bill dark red. Legs and feet red. In winter, head is white, occiput and a spot behind eye grey. Wing 213-230. Tarsus 25-27. Bill 20-22. Young : above brown with white tips, secondaries bordered white on outer webs, tail with brown terminal band, bill dark brown, legs and feet flesh colour.

Breeds.—Russia from Archangel south to Moscow, abundant on Lake Ladoga ; Baltic Provinces, Gulf of Bothnia, Sweden (Upland and Jemtland), Gothland and Öland, N.E. Prussia, Denmark, and widely in N. Asia. Migrates ; occurs on passage and in winter on North Sea Coasts and in Mediterranean, Black and Caspian Seas, and also in E. Asia. Irregular visitor to British Isles. Has occurred Faroes, Bermuda, and States of New York and Maine.

Larus ridibundus ridibundus L. BLACK-HEADED GULL. *Fr.* Goéland rieur ; *Ger.* Lachmöwe ; *Ital.* Gabbiano comune ; *Swed.* Skrattmåse.

♂ ♀ summer. Head, throat, and foreneck sooty brown ; eye-rim white, interrupted in front ; hind neck, tail, and underparts white ; back, scapulars, and upper wing coverts pale grey ; four outer primaries black tipped, 1st primary white, with outer web except small part near tip and inner part of inner web black, in the next three only outer web black near tip, inner primaries grey. Bill, legs and feet red. In winter head and throat white, with some grey feathers on occiput, and dark spot in front of eye and behind ear coverts. Wing 280-310. Tarsus 41-46. Bill 27-32. Young : brown above, upper wing coverts light grey, primaries black, with white shafts and tip and white stripe on inner web, bill flesh coloured with dark brown tip, legs and feet pale flesh.

Breeds.—Faroes, British Isles, Continental Europe from S. Scandinavia, Finland, and N. Russia south to S. France, N. Italy, Danube Valley and in Russia to Perm and Vologda ; and also

in W. Asia. Partly migratory ; many winter British Isles and Coasts of North Sea ; others wander south to Mediterranean Basin, N.W. Africa, Nile Valley, Red Sea, Persian Gulf, and further east in S. Asia.

Larus leucophthalmus Temminck.

♂ ♀ Head, throat, and foreneck black at all seasons ; above and below eye a white stripe ; back, scapulars, upper wing coverts, and middle upper tail coverts dark grey ; nuchal collar, edge of wing, tail, and underparts white ; under wings dark grey ; primaries black, inner tipped white, as are also secondaries. Bill long and slender, dark carmine red, tip black. Legs and feet yellow. Iris white, eye-rim red. Wing 320-330 (H.).

A Red Sea species ; occurs in winter at times on Egyptian Coast up to Suez.

Larus hemprichi (Bruch). HEMPRICH'S GULL.

Resembles "leucophthalmus" but head and throat grey brown. Iris brown, eye-rim white. Bill thicker, greenish yellow with red tip and a black band behind tip. Legs and feet dull yellow. Chick in down is peculiar ; pale sandy white, unspotted.

Also a Red Sea and E. African species ; occurs on Egyptian Coast up to Suez.

PAGOPHILA.

Legs feathered to heel-joint ; tarsus shorter than middle toe and claw.

Pagophila eburnea (Phipps). IVORY GULL.

♂ ♀ winter and summer. Pure white. Bill slaty blue, tip yellow. Legs and feet black. Eye-rim orange red, iris brown. Wing 335-365. Tarsus 39-42. Bill 32-36. Immature: greyish on face and throat ; spots on upper parts and occasionally underparts, tips of quills, and subterminal band on tail dark brown.

Breeds. — Circumpolar ; Spitzbergen, Nova Zembla, Franz Joseph Land, Islands off N. Asia and Arctic N. America to N.W. Greenland. Occurs in winter occasionally on N.W. European Coasts, chiefly Faroes, Shetlands, Orkneys, Scandinavia and Finland ; rarely south as far as N.W. France ; in America south to New York and British Columbia.

RISSA.

Hind toe rudimentary; breed in colonies on sea cliffs; nest of seaweed and grass; eggs 3, variable, ground colour greenish white, pale ochreous or light olivaceous marked with dark brown and purplish grey.

Rissa tridactyla tridactyla (L.). KITTIWAKE. *Fr.* Mouette tridactyle; *Ger.* Dreizehenmöwe; *Ital.* Gabbiano tridattilo; *Swed.* Tretåig Måse.

♂ ♀ summer. Head, neck, tail coverts, tail, and underparts white; back, upper wing coverts and scapulars light blue grey, last with white tips; primaries and secondaries light grey, outer web of 1st primary and tips of outer primaries black, tips of inner primaries and secondaries white. Bill yellow with green tinge. Gape and eye-rim red. Iris brown. Legs and feet dark reddish brown. In winter, occiput, nape and sides of neck are slaty grey. Wing 303-325. Tarsus 31-34. Bill 31-35. Young: nape and hind neck white, tipped black, forming a half collar, behind ear coverts a dark spot, scapulars and inner wing coverts brown, subterminal black band on tail, bill black.

Breeds.—Brittany Coast (rare), British Isles, Faroes, Iceland, Spitzbergen, Franz Joseph Land, and on Norwegian Coasts and Murman Coast of N. Russia; also in N. Asia, Greenland, and E. Coast N. America. Some move south in autumn and winter; occurs then in Mediterranean, Canaries, Azores, W. Coast Africa to Senegal and Cape de Verde, and in America to Great Lakes, Bermuda, and N. United States. Abundant in N. Atlantic after the breeding season.

RYNCHOPS.

Bill long, laterally compressed, lower mandible longer than upper.

Rynchops flavirostris Vieillot. AFRICAN SCISSOR-BILL.

♂ ♀ summer. Above dark brown; forehead, face, throat and underparts white; under wing coverts brownish grey; tail forked. Bill, legs and feet orange red. Wing 335-365. Bill to tip of upper mandible 54-65, lower mandible 78-98 (H.). In

winter, crown is white tipped, neck whitish, bill greenish grey towards tip.

An African species, which has occurred in Egypt between December and July, as far north as Nile Delta, and is reported to have bred there.

STERCORARIIDÆ.

Bill with a cere; sternum with only one notch on each side; claws strong and sharp.

STERCORARIUS.

Gull-like, but bill more hooked than in "Larus"; claws strong and curved; middle tail feathers longest; summer and winter plumages alike; more predatory in habits; nest of seaweed or grass in depression in moss; eggs usually 2, pale olivaceous or olive brown, blotched and spotted with dark brown.

Stercorarius skua skua (Brünnich). GREAT SKUA.

♂ ♀ Above dark brown with rufous streaks; beneath reddish brown; tail central feathers slightly longer than others; primaries white towards base, most marked on 2nd to 5th, and here forming a white patch on wing, best seen when wing extended. Bill black. Legs and feet black. Wing 393-420 (H.). Tarsus 64-71. Bill 44-53. Young: above uniform dark brown, upper wing coverts with white tips; beneath dark brown, lighter in middle of abdomen.

Breeds.—Iceland, Faroes, Shetland, Orkneys (at least recently); possibly also in Hudson Bay. Migratory; occurs in winter on Atlantic Coasts south to Gibraltar and occasionally Madeira and W. Mediterranean; seen chiefly at sea; on American side, occurs south to New Brunswick and New England States.

Stercorarius pomarinus (Temminck). POMATORHINE SKUA. *Swed.* Bredstjerstad Labb.

♂ ♀ Above chocolate brown; crown and face black, extending to below gape; nape and sides of neck straw yellow; beneath white, lower abdomen, under wing and under tail coverts brown; central tail feathers broad and twisted, 70-88 m.m. longer than others, and tips rounded. Bill greyish black, bluish at base

above. Legs and feet black. Wing 345-370. Tarsus 50-56. Bill 34-40. Young : above dark brown with rufous tips, beneath dull white obscurely barred light brown, axillaries and under wing coverts dark brown barred white, tail feathers and primaries dark brown with white bases, and latter with white on inner web, central tail feathers not twisted and only slightly lengthened. Both adults and young have a light and dark phase ; in the latter phase plumage is almost uniform dark brown.

Breeds.—Circumpolar ; Murman Coast, Waigatz, Nova Zembla, Spitzbergen, tundras of N. Asia, Alaska, Greenland. Comes south in autumn and winter but seen chiefly at sea, even mid-ocean ; occasionally in Black and Mediterranean Seas, in E. Atlantic south to Madeira and W. African Coast, in W. Atlantic south to New York and Pennsylvania, and on N. Pacific Coasts both Asiatic and American.

Stercorarius parasiticus parasiticus (L.). RICHARDSON'S SKUA. *Ger.* Schmarotzerraubmöwe ; *Ital.* Labbo ; *Swed.* Vanlig Labb.

♂ ♀ Smaller than "pomarinus" and greyer brown ; black of head not descending below gape, feathers of nape slightly lengthened ; beneath white (throat and chest in some greyish) ; central tail feathers tapering, projecting 80-90 m.m. beyond others ; 1st four primaries at least have white shafts, and inner webs are white towards root. Bill black, brownish at base above. Legs and feet black. Wing 310-328. Tarsus 40-46. Bill 26-29. A dark phase occurs, in which upper parts are dark brown, and underparts lighter brown. Young : above dark brown with rufous buff tips ; beneath mottled brown and buff, or white mottled and barred with brown, under tail coverts barred brown and white or rufous.

Breeds.—Circumpolar ; N. Scotland, Hebrides, Orkneys, Shetlands, Faroes, Iceland, Norwegian Coasts, Sweden, N. Russia, Waigatz, Nova Zembla, Franz Joseph Land, Jan Mayen, Spitzbergen ; and in N. Siberia, Arctic America and Greenland. Wanders south in autumn and winter ; has been met with in Volga Valley on migration ; not common in Mediterranean ; occurs chiefly down Coasts of W. Europe and W. Africa as far as Cape of Good Hope ; also Coasts of America and India.

Stercorarius longicaudus Vieillot. LONG-TAILED SKUA.

Swed. Fjällabb.

♂ ♀ Above much paler brown than in "parasiticus"; crown glossy deep brown, face and neck straw yellow, throat and chest white, abdomen, under tail coverts, and tail smoky brown; central tail feathers long and tapering, 210-270 m.m. beyond others; shafts of 1st and 2nd primaries only white. Bill black, olive green at base above. Legs and feet dull blue grey, with black patches on latter. Wing 298-327. Tarsus 40-44. Bill 24-28. Young: above brown, with whitish or buff tips; beneath brown mottled and barred with white, under tail coverts brown barred white.

Breeds.—N. Scandinavia, Lapland, Finland, N. Russia south to Archangel, Nova Zembla, N. Siberia, Greenland, and probably elsewhere in Arctic regions. Occurs sparingly in autumn and winter in W. Europe, and Mediterranean from Gibraltar to Italy; also in Asia south to Japan and in America to Florida and Mexico. Irregular on migration on British Coasts.

ALCÆ.

Web-footed sea-birds; secondaries and axillaries short; tail short and rounded, wedge-shaped; hind toe absent or rudimentary; feet set far back; powerful swimmers and divers; feed on fish, molluscs, crustaceans, mostly obtained by diving.

ALCIDÆ.

Characters those of "Alcæ."

ALCA.

Bill sideways compressed, upper mandible decurved at tip; nares partly hidden by feathers; tarsus shorter than middle toe with claw; tail 12 feathers; nest on cliffs; one egg.

Alca torda L. RAZORBILL. *Fr.* Pingouin macropère; *Ger.* Tordalk; *Ital.* Gazza marina; *Swed.* Tordmule.

♂ ♀ summer. Head, throat, foreneck, and upper parts sooty

black, a narrow white streak from base of bill to eye ; secondaries tipped white ; beneath white. Bill corrugated, black, with a white transverse curved line. Legs and feet black. Wing 187-198. Tarsus 30-33. Bill 27-30. In winter the white line from bill to eye disappears, and throat and underparts are white. Young are like winter adults but have no corrugations on bill.

Breeds.—Iceland, Faroes, British Isles, Coasts of Scandinavia, Murman Coast, Heligoland, Brittany Coast, and in Baltic on Bornholm, Gothland, and in Gulf of Bothnia ; also Greenland and eastern N. America. In winter, many wander south as far as Moroccan Coast and Canaries and also into Mediterranean, chiefly west, but occasionally to Malta and Adriatic Sea, and on American Coast south to N. United States.

ALLE.

Bill short, thick, and curved, nares free ; maxilla broader than high ; tail 12 feathers ; one egg, pale greenish blue, in a cleft of a rock or amongst stones or boulders.

Alle alle (L.). LITTLE AUK. *Fr.* Guillemot nain ; *Ger.* Krabbentaucher ; *Swed.* Alkekung.

♂ ♀ summer. Above blue black, wings brown, scapulars edged white both webs, secondaries tipped white ; beneath white, throat and foreneck sooty brown. In winter, throat, sides of neck, and underparts white. Bill black. Legs and feet dark bluish grey. Wing 116-132. Tarsus 20-22. Bill 13-15.

Breeds.—Iceland (Mevenklint and Graemsay), Jan Mayen, Bear Island, Spitzbergen, Franz Joseph Land, Nova Zembla ; also Greenland. Comes south in winter, sometimes in great numbers, to Coasts of W. Europe as far as Azores, but rare in Mediterranean ; also visits American Coast south to S. Carolina.

URIA.

Bill long, pointed, and only slightly compressed ; nares covered by feathers ; tarsus shorter than middle toe and claw ; eggs 1-3.

Uria troille troille (L.). GUILLEMOT. *Fr.* Guillemot troile; *Ger.* Dumme Lumme; *Ital.* Uria; *Swed.* Sill-grisla.

♂ ♀ summer. Above blackish grey, head, throat, and fore-neck browner, almost chocolate brown; a crease in feathers from bill to eye and continued behind eye; secondaries with narrow white tips; beneath white. In winter, above black, sides of head (except post-ocular stripe), throat and underparts white. Bill black. Legs and feet light brown in front, blackish behind, webs black. Wing 190-207. Tarsus 34-38. Bill 40-48.

Breeds.—Bear Island, Iceland, Faroes, British Isles, Murman Coast, Norway, Gothland, Bornholm, Heligoland, N.W. Coast France, Portugal (Berlengas); also on American side of Atlantic, S. Greenland to Newfoundland. Wanders south in winter as far as 30° N., and also enters the Mediterranean. A variety occurs with the crease behind eye white and eye-rim white, known as “*U. ringvia*,” Bridled Guillemot.

Uria lomvia lomvia (L.). BRÜNNICH’S GUILLEMOT.

♂ ♀ summer. Above darker than in “*U. troille*”; crown black, contrasting with brown face. Bill shorter, upper mandible somewhat swollen at sides behind the nostril, and unfeathered part there more extensive than in “*troille*,” bare bill behind nostril being about equal in length to bill in front. Bill black tinged greenish, yellowish at tip and on upper mandible near gape. Legs and feet grey black, tinged yellowish in front. In winter, plumage changes as in “*troille*.” Wing 202-222. Tarsus 33-36. Bill 30-35.

Breeds.—Iceland (Mevenklint and Graemsay), Bear Island, Jan Mayen, Spitzbergen, Franz Joseph Land, Murman Coast, Nova Zembla; also on Taimyr Peninsula and on American Coast from N. Greenland south to Labrador. Largely resident; sometimes appears in small numbers on Norwegian and British Coasts (rarely) and in Baltic, as well as on the western side of Atlantic.

Uria grylle grylle (L.). BLACK GUILLEMOT. *Ger.* Gryllteist; *Swed.* Tobis-grisla.

♂ ♀ summer. General colour oily greenish black; quills at base of inner webs, median wing coverts, terminal half of greater wing coverts, under wing coverts and axillaries white. Bill black. Legs and feet coral red. In winter (except in very old

birds, which do not change), mostly white, upper parts being black with white tips, tail and wings as in summer. Young have white wing coverts mottled with black. Wing 155-166. Tarsus 30-34. Bill 30-35.

Breeds.—Iceland, Faroes, Scotland, Ireland, Isle of Man, Scandinavia to N. Cape and east along Murman Coast to White Sea, in Baltic on Bornholm, Aland Islands, and Swedish and Finnish Coasts to north of Bothnian Gulf; also S. Greenland and E. Coast of N. America to Maine. Winters in N. Atlantic.

U. grylle mandti Lichtenstein. Bill more slender than in "grylle"; greater wing coverts white to bases. In winter, much whiter above, white tips much longer and rump pure white. Wing 161-171. Tarsus 29-31. Bill 26-30.

Breeds.—Bear Island, Spitzbergen, Franz Joseph Land, Nova Zembla, Waigatz, and on Coasts of Siberia, Arctic N. America and Greenland. Mostly winters in Arctic regions, occasionally comes south on E. Coast of America.

FRATERCULA.

Bill peculiar, sideways compressed, greatest thickness less than half its height at base; nares close to cutting edge of bill, in narrow longitudinal slits; nest in burrows or holes in cliffs; egg one, yellow white faintly spotted brown.

Fratercula arctica arctica (L.). PUFFIN. *Fr.* Macareux; *Ger.* Lund; *Swed.* Lunefogel.

♂ ♀ Upper parts and collar black, sides of head, chin and upper throat grey; beneath white. Bill in breeding season bluish grey at base, apical portion carmine with yellow ridges and bands across yellow, at base of upper mandible a raised rim is yellow and at mouth angle is an orange rosette of raised skin. At the same season above and below eye are raised blue grey patches of horny skin. Legs and feet orange. In autumn, the raised rim at base of bill, the rosette at mouth angle and patches above and below the eye drop off and bill becomes smaller. Wing 158-177 (H.). Bill 33-44. Height of bill at base 31-44. Young have smaller bills without ornamentation.

Breeds.—Bear Island, Iceland, W. Coasts Sweden and Norway up to Russian Lapland; Faroes, British Isles, Channel Islands, and Coast of Brittany; also S. Greenland and E. Coast of America. Comes south in winter, sometimes as far as Canaries and Azores, and also met with in W. Mediterranean.

The Puffins breeding in Faroes and farther south have been separated as "*F. arctica grabæ*" (Brehm) on account of their smaller size. Wing 155-166. Tarsus 24-26. Bill 34-37. Height at base 33-36. It will be seen that measurements overlap, and the distinction is untenable. Winter birds from Majorca, said to be still smaller, have been named by Jordans "*F. arctica meridionalis*." This also cannot be recognised.

F. arctica naumanni Norton. Larger. Wing 175-194 (H.). Tarsus 30. Bill 42. Height at base 41-49.

Breeds.—Spitzbergen and possibly Nova Zembla, Jan Mayen and N. Greenland.

ALECTORIDES.

Bustards, Cranes, and Rails.

OTIDIDÆ.

Bill short; powder-down patches on each side of breast; tail feathers 20; no hind toe.

OTIS.

Bill shorter than head, nares free from feathers; frequent open country; great runners; polygamous; nest on ground.

Otis tarda tarda L. GREAT BUSTARD. *Fr.* Outarde barbue; *Ger.* Trappe; *Ital.* Otarda; *Swed.* Stor-Trappe.

♂ summer. Above reddish chestnut with black bars; head grey, hind neck chestnut, chin and "whiskers" white, foreneck and chest chestnut spotted black; outer wing coverts and greater part of secondaries lavender white; breast and abdomen white; under tongue is an opening into a throat sac, which is distended in display, not present in young males. Bill bluish

grey with black tip. Legs and feet dark reddish grey. Wing 600-650. Tarsus 148-156. Bill 45-53 (H.). After breeding season the "whiskers" drop out and red of chest is lost; they are resumed about mid-winter. ♀ Head, neck, and chest grey; whiskers absent. Wing 530-550. Tarsus 117-120 (H.). Young are like ♀.

Breeds.—Portugal, S. Spain, N. Morocco, Plains of Germany, Hungary, Rumania, Bulgaria, Greece, Poland, Russia north to Orel; and also in Siberia. Largely resident. Formerly bred many other countries in Europe where now rare visitor, *e.g.*, France, England, Denmark, S. Sweden.

Otis tetrax tetrax L. LITTLE BUSTARD. *Fr.* Cane-petière; *Ger.* Zwergtrappe; *Ital.* Gallina prataiola.

♂ summer. Above reddish or sandy brown with irregular wavy bars of black; outer wing coverts and secondaries white; quills brown, basal part more or less white; ear coverts and throat slate, narrow V-shaped collar white, broad V-shaped collar and pectoral band black; beneath white. Bill greyish with black tip and yellow below at base. Legs and feet greyish yellow. After the breeding season becomes more like ♀, losing the black and white collars and pectoral band. Wing 236-252 (H.). ♀ Upper parts like ♂, head and neck like back, breast ochreous with broad brown bars. Wing 245-247 (H.). Young are like ♀.

Breeds.—N.W. Africa (Tunis to Morocco), Spain, Portugal, France, and possibly W. Germany. Rare visitor to Madeira and Canaries. Chiefly resident.

O. tetrax orientalis Hartert. Darker, less sandy than "tetrax" and with broader black vermiculations above. Wing ♂ 250-280, ♀ 250-263. Tarsus 67-70. Bill 24-25 (H.).

Breeds.—S. Italy, Sicily, Sardinia, Rumania, Greece, Austria, E. Prussia, Poland, and Russia north to Kiev, Poltava, and Orenburg; also in W. Siberia. Northern birds migrate; occurs in Egypt and S.W. Asia in winter; occasional visitor to N. and W. Europe, rare in British Isles.

EUPODOTIS.

Bill longer than in "Otis"; head feathers lengthened with suspicion of crest.

Eupodotis arabs (L.).

♂ Above sandy brown with black vermiculations, sides of crown and of crest black ; neck grey brown, barred dull white ; wing coverts white tipped, quills white mottled and barred blue grey ; tail white with brown bars ; beneath white. Bill yellow brown, darker above. Legs and feet yellow. Wing 560-625. Tarsus 180-200. Bill 80-90. ♀ Smaller ; tail more yellowish brown. Wing 470-530. Bill 75-80 (H.).

Resident.—Morocco, N.W. Algeria, Sahara, N.E. Africa and Arabia.

CHLAMYDOTIS.

Distinctly crested.

Chlamydotis undulata undulata (Jacquin). HOUBARA BUSTARD.

♂ ♀ Above reddish buff freckled and indistinctly barred black ; crest long and white ; primaries partly white, secondaries white ; tail reddish buff with blue grey bars and white tips ; beneath white, freckled black on neck, with a long ruff, black on sides of neck and white in front. Bill grey brown, with darker tip and yellow towards base. Legs and feet grey. Wing ♂ 385-400, ♀ 330-360. Tarsus ♂ 90-101, ♀ 86-94. Bill ♂ 35-42, ♀ 35-40 (H.).

Resident.—N. Sahara and high lying plains of Atlas Range in N. Africa (rare in Morocco). Occasionally straggles to S. Europe, recorded Malta, Italy, Spain ; and occurs Egypt west of Nile.

C. undulata macqueeni (Gray). Crest tipped black, foreneck and chest grey without freckles, bars on upper parts more pronounced. Wing ♂ 386-428, ♀ 356-370 (H.).

Breeds.—C. and S.W. Asia and in Egypt east of Nile. Occurs regularly outside breeding season in S. Russia and occasionally further west in Europe, even to Britain.

C. undulata fuertaventuræ (Rothschild and Hartert). Above paler buff with larger black markings than in typical "undulata" ; no white tips to tail and blue grey bars broader and darker. Wing ♂ 370-375, ♀ 320-348 (H.).

Resident.—E. Canaries (Fuerteventura and Lanzarote).

GRUIDÆ.

Tail feathers 12 ; hind toe present, higher than the others ; bill as long as or longer than head.

MEGALORNIS.

Head in old birds partly or entirely without feathers ; tall, long-legged birds with outward resemblance to Storks ; frequent open plains and marshes ; wings very long, especially secondaries ; feed on vegetable substances, insects, reptiles, etc. ; nest on ground in marshes ; eggs 2, olive grey or olive brown, streaked and blotched reddish or pale brown.

Megalornis grus grus (L.). CRANE. *Fr.* La Grue cendrée ; *Ger.* Kranich ; *Ital.* Gru ; *Swed.* Trana.

♂ ♀ Pale slate grey, quills black ; crown, forehead, and lores without feathers but with black bristles ; occiput red ; nape, throat, and foreneck sooty, band from eye down sides of neck white ; breast-bone hollowed out, containing bent windpipe. Bill greyish green, paler at tip, browner at base. Legs and feet black. Wing ♂ 600-630, ♀ 550-590. Tarsus 250-260. Bill ♂ 114-118, ♀ 105-112 (H.).

Breeds.—Scandinavia, Finland, Livonia, Russia up to 68° N., N. Germany, S. Spain, Venetia, Lower Danube, and in W. Asia. Migrates ; winters in Mediterranean Basin and in Africa. Of occasional occurrence in British Isles.

ANTHROPOIDES.

Head entirely feathered ; secondaries very long, reaching beyond primaries.

Anthropoides virgo (L.). DEMOISELLE CRANE. *Ger.* Jungfernkranich ; *Ital.* Damigella di Numidia.

♂ ♀ Blue slate ; crown light grey ; lores, hind neck, pectoral plumes and quills black ; secondaries long, pointed, pendant, concealing tail, tipped black ; tuft of white feathers spring from behind eye resembling crest. Bill olive, orange at tip. Legs and feet black. Iris red. Wing 445-525. Tarsus 173-220. Bill 63-72. ♂ being the larger (H.).

Breeds.—Algeria (high plateaux) (and possibly Morocco and S. Spain), Dobrudscha, S. Russia from Kiev east to Orenburg ; also widely in Asia. Migratory ; found in winter in N.E. Africa and S. Asia ; rare visitor to N. and W. Europe, recorded Hungary, Germany, Sweden, Heligoland, and Britain.

RALLIDÆ.

Body laterally compressed ; wing short and rounded ; hind toe present ; legs and toes long ; tail short ; nestling nidifugous, covered with black down.

RALLUS.

Bill longer than head ; tarsus shorter than middle toe with claw ; nares long, lying in a groove.

Rallus aquaticus aquaticus L. WATER-RAIL. *Fr.* Râle d'eau ; *Ger.* Wasserralle ; *Ital.* Porciglione ; *Swed.* Vattenralle.

♂ ♀ Above olive brown with broad black central streaks ; beneath slate grey, flanks darker grey barred white, ventral region reddish buff. Bill orange red, ridge above and tip black brown. Legs and feet fleshy brown. Wing ♂ 120-126, ♀ 113-118. Tarsus 41-45. Bill ♂ 38-40, ♀ 35-37.

Breeds.—Iceland (rare), Britain, throughout Europe from Mediterranean north to Arctic Circle, N. Africa (Egypt (rare) to Morocco) ; possibly W. Siberia. Largely migratory ; not uncommon in N.W. Europe in winter, but winters chiefly Mediterranean Basin ; also occurs at that season in S.W. Asia.

The distribution of this race and that of "*R. aquaticus korejewi*" Sarudny (a paler form) in extreme W. Siberia is not yet ascertained.

PORZANA.

Bill shorter than head ; nares in a groove and partly covered by membrane ; middle toe with claw longer than tarsus.

Porzana porzana (L.). SPOTTED CRAKE. *Fr.* Poule d'eau marouette ; *Ger.* Tüpfelsumpfhuhn ; *Ital.* Voltolino ; *Swed.* Småtäckig Sumphöna.

♂ ♀ Above olive brown, streaked white and with some

black feathers ; forehead, sides of crown, throat, and chest slaty, spotted white ; inner web of inner secondaries reddish brown, outer web like the back ; abdomen whitish, flanks, under wing coverts and axillaries brown barred white, under tail coverts buff. Iris brownish red. Bill olive yellow, orange at base below. Legs and feet yellowish green. Wing 115-120. Tarsus 31-33. Bill 16-17.

Breeds.—Britain (rare) ; Continental Europe from 65° N. in Norway, and 64° in Finland and Russia to Mediterranean ; Sicily ; N.W. Africa (probably) ; also in W. Asia. Migrates ; more abundant Britain on passage, some winter in S. Europe but majority in N. Africa and S.W. Asia.

Porzana carolina (L.). CAROLINA CRAKE.

Like "porzana" but inner web of inner secondaries same colour as outer web ; throat black. Wing ♂ ♀ 103-112. Tarsus 32-35. Bill 16-20.

An American species ; has occurred several times in British Isles.

Porzana pusilla intermedia (Hermann). BAILLON'S CRAKE. *Fr.* Poule d'eau Baillon ; *Ger.* Zwergsumpfhuhn ; *Ital.* Schiribilla grigiata.

♂ Above olive brown, streaked black and freckled white ; forehead, face, throat, and underparts slate ; lower abdomen, flanks and under tail coverts black barred white ; under wing coverts and axillaries almost uniform brown ; outer margin of 1st primary white. Iris red. Bill dark olive above, below and at base green. Legs and feet olive brown. Wing ♂ 90-93, ♀ 82-84. Tarsus 27-30. Bill 16. ♀ Throat white. Young ; underparts buff, barred white on flanks and under tail coverts.

Breeds.—Continental Europe south from Holland and Central Germany across to the Urals ; Egypt ; N.W. Africa ; W. Asia ; very rarely in Britain. Migratory ; winters in Africa.

The typical form "P. p. pusilla" is E. Asiatic.

Porzana parva (Scopoli). LITTLE CRAKE. *Fr.* Poule d'eau poussin ; *Ger.* Kleines Sumpfhuhn ; *Ital.* Schiribilla.

♂ Larger than Baillon's Crake ; above olive brown with only a few white streaks on scapulars ; beneath blue slate slightly barred white on abdomen and flanks ; outer web of 1st primary brown ; under wing coverts and axillaries uniform olive grey. Iris red.

Bill olive green, brighter below, and red at base. Legs and feet brownish green. Wing ♂ 102-111, ♀ 98-107. Tarsus 28-32. Bill 16-18. ♀ Underparts buff, flanks and under tail coverts brown barred white. Young has outer web of 1st primary white, but is known from Baillon's Crake by size.

Breeds.—From Holland, N. Germany, and 59° N. in Russia south throughout Europe; Algeria and Tunisia (possibly); also W. Asia. Migrates; winters chiefly in Mediterranean Basin and S.W. Asia to India. Of occasional occurrence in British Isles, Canaries, and Azores.

CREX.

Bill shorter than head, high, and compressed sideways; tarsus about equal to middle toe and claw. Affects drier localities than other "Rallidæ"; nest a shallow depression on ground; eggs buffy white, blotched and spotted with rufous.

Crex crex (L.). CORN-CRAKE. *Fr.* Râle des prés; *Ger.* Wachtelkönig; *Ital.* Re di quaglie; *Swed.* Ängsknarr.

♂ ♀ Above blackish brown, marked with greyish and reddish ochreous; quills rufous; wing coverts rusty; sides of head blue grey, lores and a stripe behind eye brown, chin white, underparts white, under tail coverts marked reddish brown, flanks rufous with white bars. Bill dark brown. Legs and feet greyish brown. Wing 134-146. (♀ generally the smaller.) Tarsus 38-41. Bill 16-19.

Breeds. — Faroes (exceptional), British Isles, Continental Europe from Arctic Circle in Norway and Sweden, 65° in Finland and N. Russia and 60° in Urals, south to Pyrenees, N. Italy and Macedonia; also in W. Asia. Migratory; passes through S. Europe and N. Africa; winters in Africa south to Cape Colony; occasional birds winter N. Africa and even Europe, as far north as Germany and Britain.

GALLINULA.

Frontal plate well developed; nares in a groove; toes long, middle toe longer than tarsus; less shy than true Rails, swim easily, often perch; nest bulky, of flags and leaves on or near bank, often among reeds; eggs clay yellow, marked and blotched with violet grey and reddish brown.

Gallinula chloropus chloropus (L.). WATERHEN. *Fr.* Poule d'eau; *Ger.* Rohrhuhn; *Ital.* Gallinella d'acqua; *Swed.* Rörhöna.

♂ ♀ Above dark olive brown; head, neck, and underparts dark slaty grey with white streaks on flanks; under tail coverts white, black in centre. Iris brownish red. Bill red, tip yellow. Frontal shield red. Legs and feet dull green, at heel-joint a yellow and red band. Wing ♂ 173-179, ♀ 161-167. Tarsus ♂ 51-52, ♀ 43-50. Bill from feathers at side of plate 25-28.

Breeds.—Europe, including British Isles, from C. Norway, 60° in Finland, and Petrograd in Russia south to Mediterranean and its Islands; N. Africa (Morocco to Egypt); also W. Asia. Migratory in extreme north, but resident in Britain and Central Europe. Has occurred Iceland, Faroes, Azores, Madeira, and possibly Canaries.

PORPHYRIO.

Like "Gallinula" but bill higher; nares not in a groove; colour largely blue; frequent lakes; nest among reeds; eggs like those of Waterhen.

Porphyrio caeruleus (Vandelli). PURPLE GALLINULE.

♂ ♀ Purple blue, face, throat, and chest brighter; abdomen blackish blue; under tail coverts white. Iris red. Bill and frontal plate dark red. Legs and feet coral red, joints of toes brownish. Wing ♂ 260-280, ♀ 250-263 (H.). Tarsus 92-100. Bill from feathers at side of plate 40.

Resident.—S. Portugal, S. Spain, Morocco, Algeria, Tunisia, Sardinia, Sicily. Of occasional occurrence in S. France and Italy.

Porphyrio madagascariensis (Latham). GREEN-BACKED GALLINULE.

Resembles "caeruleus" but greenish above, face and throat much paler blue; crown, hind neck, wing coverts, quills, and underparts purplish blue. Bill and frontal shield bright red. Legs and feet coral red. Wing ♂ ♀ 230-260. ♂ the larger. Tarsus 86-102. Bill from end of frontal shield 55-72 (H.).

Resident.—Africa north to Sahara, and Nile Valley up to Alexandria and Lake Menzaleh. Has occurred Sicily and Sardinia.

Porphyrio alleni Thompson. ALLEN'S GALLINULE.

♂ ♀ Above olive green, head blackish, shading into reddish blue of neck and underparts; under tail coverts white. Iris bluish red. Bill red. Frontal shield dark greenish blue. Legs and feet brownish red. Wing ♂ 160-170, ♀ 145-155. Tarsus 50-55. Bill from end of frontal shield 36-44 (H.).

An African breeding species which has occasionally occurred, chiefly in autumn and winter, in various parts of S. Europe and N. Africa, *e.g.*, Alexandria (1), Sicily (2), Italy (2), Azores (several), Madeira (1), Spain (1), Morocco (1), Tunis (1), England (1).

FULICA.

Toes lobed; middle toe and claw longer than tarsus; frontal shield present; nest bulky, floating among reeds; eggs yellowish grey, spotted and marked brown.

Fulica atra atra L. COOT. *Fr.* Foulque; *Ger.* Blässhuhn; *Ital.* Folaga; *Swed.* Sothöna.

♂ ♀ General colour slaty black, lighter beneath; tips of secondaries whitish. Iris red. Bill and frontal shield white. Bare part of tibia orange. Legs and feet bluish grey, on sides of tarsus greenish yellow. Wing 198-215. Tarsus 56-60. Bill from feathers at side of shield 33-36.

Breeds.—Iceland (occasional), British Isles, Continental Europe from 70° in Norway, 61° in Sweden, Finland and N. Russia, and about 57° in Urals, south to Mediterranean and its Islands; N.W. Africa; also widely in Asia. Largely resident, but northern birds migrate. Rare visitor Madeira and Canaries.

Fulica cristata Gmelin. CRESTED COOT.

Like "F. atra" but has no white tips to secondaries, and on each side of frontal shield is a red fleshy lobe. Legs and feet slaty blue, lower part of tibia yellow-green. Bill and frontal shield bluish white. Iris red. Wing ♂ 216-238, ♀ 205-213 (H.).

Resident.—S. Portugal, S. Spain, N.W. Africa (Morocco and Algeria), and Africa south of Sahara. Has occurred in Italy, Sicily, Malta, and S. France.

TURNICES.

Hemipodes; small Quail-like birds; no hind toe; tail short; male incubates and attends young.

TURNIX.

Characters as in "Turnices."

Turnix sylvatica sylvatica (Desfontaines). ANDALUSIAN HEMIPODE. *Span.* Torillo.

♀ Above black barred with chestnut and with some white streaks; on crown a buff streak; wing coverts barred black and chestnut and tipped pale buff; beneath, breast at sides black with buff margins, in the centre cinnamon, abdomen buff, flanks and under tail coverts chestnut. Iris yellow. Bill bluish grey. Legs and feet light brown. Wing 95-102. Tarsus 23-25. Bill 11-12 (H.). ♂ Smaller and less brightly coloured. Wing 86-96. Tarsus 23. Bill 10.

Resident.—S. Spain and Portugal, Morocco, Algeria, Tunisia and Tripoli. Has occurred S. France and Italy; formerly bred Sicily.

GALLI.

Game birds. Four-toed, hind toe higher than fore toes; young leave nest when hatched; flight feathers develop early.

TETRAONIDÆ.

Nares covered with feathers; tarsus partly or entirely feathered; toes feathered or with a row of comb-like plates on the sides.

LAGOPUS.

Tarsus and toes feathered to claws; no spur on tarsus; frequent treeless country, mountains, and moors; feed on seeds, berries and young shoots; nest a depression; eggs numerous, pale olivaceous, richly spotted and blotched dark brown.

Lagopus lagopus lagopus (L.). WILLOW GROUSE.

Ger. Weidenschneehuhn ; *Swed.* Dalripa.

♂ spring. Head, neck, breast, flanks, and back deep chestnut with black markings on head, and black vermiculations on neck, breast, and back ; some white on rump and upper tail coverts ; wings, central tail feathers, region round eye, and underparts white ; other tail feathers black, white tipped. Bill black. Comb above eye red. Wing ♂ 212-217, ♀ 185-200. Tarsus 37-40. Bill 14-16. Later in summer white is only on wings and middle of abdomen. ♀ is duller in colour and without red comb or with only a trace of it. In winter plumage both sexes are entirely white, except tail, which is as in spring, and shafts of primaries, which are mostly black.

Resident.—Norway from Stavanger northwards, C: and N. Sweden, Lapland, Finland, Courland, Russia from Moscow and Ural districts northwards ; also across Siberia.

L. lagopus major Lorenz. Larger than typical form. Wing ♂ 234-243, ♀ 207-209 (H.).

Resident.—From Orenburg (E. Russia) through the Steppes of Turgai and Akmolinsk to Omsk.

Lagopus scoticus (Latham). RED GROUSE.

♂ Blackish brown vermiculated with chestnut, wings and tail black brown, central tail feathers vermiculated ; white above and below eye ; leg feathering grey brown, becoming dull white towards feet. Comb red. Bill dark horn. Wing ♂ 195-217, ♀ 185-203. Tarsus 36-42. Bill 10-13. ♀ is much the same but yellower. The plumage varies greatly, the above being the commonest. Other plumages are (1) Black with chestnut barring, in some almost black, very slightly barred ; (2) Red, marked with white on underparts and to some extent on upper parts ; (3) Spotted ; feathers tipped buff on upper parts and underparts ochreous barred with black and tipped white.

Resident.—Wales, N. England, Scotland, Ireland. Has been introduced into Germany.

Lagopus mutus mutus (Montin). PTARMIGAN. *Fr.* Poule de neige ; *Ger.* Alpenschneehuhn ; *Ital.* Pernice bianca ; *Swed.* Fjällripa.

♂ summer. General colour of upper parts and chest dark

or grey brown and black, either uniform or vermiculated, and more or less mixed with white; wings, breast, abdomen, and under tail coverts white; tail, central pair white, remainder black, tipped white. Bill black. Comb red. Wing ♂ 187-205, ♀ 180-193. Tarsus 33-35. Bill 10-12. ♀ Dark brown with ochreous bars, greater wing coverts, quills, and abdomen (more or less) white. In winter, in both sexes plumage is white except shafts of primaries, which are black, and tail, where central pair feathers white, remainder black tipped white. In ♂ lores also are black.

Resident.—Norway north from 58° lat., C. and N. Sweden, Russia from White Sea south to about 61° in Urals.

L. mutus helveticus (Theinemann). Like "mutus" but summer plumage with no white mixing, and general colour more greyish. In winter, like "mutus."

Resident.—Alpine regions, Savoy and S. Bavaria to Carinthia.

L. mutus cinereus Macgillivray. In completely moulted summer plumage like "helveticus," with no white spots; but darker at other seasons than "helveticus," in autumn a clearer grey, and in winter generally not pure white, but mixed with some dark spots.

Resident.—Scottish Highlands (including some of Inner Hebrides), seldom nesting below 2000 feet level.

L. mutus pyrenaicus Hartert. ♂ in breeding plumage very similar to "cinereus" and "helveticus" but more rusty yellow above and with broader markings. ♀ less grey than typical "mutus," and not so orange brown above as ♀ "cinereus" and "helveticus."

Resident.—Pyrenees, above 6000 feet.

L. mutus hyperboreus Sundevall. Larger and with broader bill and longer tail. Wing over 210. Tarsus 35-38.

Resident.—Spitzbergen and Franz Joseph Land.

L. mutus islandorum (Faber). Like Continental forms, but ♂ in summer more red brown with stronger bill; in autumn plumage much browner.

Resident.—Iceland.

LYRURUS.

Sexes different; toes bare; tail of ♂ deeply forked and side feathers curved, of ♀ slightly forked; frequent more wooded districts.

Lyrurus tetrix tetrix (L.). ♂ BLACKCOCK, ♀ GREY HEN. *Fr.* Coq et poule de bruyère; *Ger.* Birkhuhn; *Ital.* Fagiano di monte; *Swed.* Orre.

♂ Glossy blue black; secondaries white on basal part and tips; abdomen black, under tail coverts white, head and back violet tinged; outer tail feathers curved outwards. Comb red. Bill black. Toes dark brown. Wing 240-270. Tarsus 45-50. Bill 17-21. ♀ Dark brown, barred with chestnut, tips and bases of secondaries and of some wing coverts white; beneath greyer on breast. Wing 215-227. Tarsus 41-45. Bill 14-17.

Resident.—Scandinavia north to about 69°, Russia (except S.E. Steppes), Jutland and Bornholm, Holland, Belgium, Germany, Poland, French Mountains, Alps, Pyrenees, Carpathians, and locally Montenegro, Bosnia, Rumania; also in N. Siberia.

L. tetrix britannicus Witherby and Lönnberg. ♂ not distinguishable from typical ♂. ♀ more reddish brown than ♀ "tetrix," without white on wing coverts, and with much less grey on breast.

Resident.—Great Britain; rare in S. England, chiefly found N. England and in Scotland (mainland and Inner Hebrides).

L. tetrix viridanus Lorenz. ♂ More white in wing than in ♂ "tetrix"; black band being 12-20 m.m. broad as compared with 35-54 m.m. in "tetrix." ♀ Generally greyer, and paler rufous than typical ♀.

Resident.—E. Russian Steppes, Saratov to Orenburg, and in W. Siberia.

Lyrurus mlokosiewiczii (Taczanowski).

Like "tetrix" but in ♂ blue gloss has a greener tinge; no white on wings, under tail coverts black; outer tail feathers curving outwards and downwards. Bill black. Toes grey brown. Wing 196-211. Tarsus 50-55. ♀ Brown, freckled, not barred, with chestnut. Wing 195-200 (H.).

Resident.—Caucasus Mountains, from 5000 to 9000 feet.

TETRAO.

Tail rather long, wedge-shaped, lateral feathers shorter than middle, 18 feathers; tarsus feathered; toes bare; inhabit woods; eggs yellowish brown, spotted brown.

Tetrao urogallus urogallus L. CAPERCAILLIE. *Fr.* Coq de bruyère; *Ger.* Auerhuhn; *Ital.* Gallo cedrone; *Swed.* Tjäder.

♂ Above black; wing coverts, secondaries and scapulars chestnut brown, all freckled with white; head and neck black freckled dark grey and with bluish gloss; upper tail coverts tipped white; beneath, chest dark glossy green, breast, abdomen, and tail black, the two last with white markings (variable in extent). Comb above eye red. Bill yellowish. Feet reddish brown. Wing 380-410. Tarsus 65-75. Bill 35. ♀ Above black, barred and tipped with ochreous and white, tail barred chestnut; foreneck and chest ochreous; breast and abdomen paler, barred black and tipped white. Wing 290-310. Tarsus 52-56. Bill 24.

Resident.—Pine Forests Scandinavia up to 70° N., N. Russia from 66-30° and in Urals from 65° south to Perm, Carpathians and Balkans (Bulgaria to N. Albania), Alps, Germany, Scotland (was extinct, but again introduced).

T. urogallus aquitanicus Ingram. ♂ As in "urogallus" but smaller. Wing 350-368. ♀ Above generally darker than ♀ "urogallus" and white spots on scapulars and secondaries smaller, underparts darker. Wing 272-284 (H.).

Resident.—Pyrenees, and possibly Cantabrian Mountains, N. Spain.

T. urogallus volgensis Buturlin. ♂ Lighter above than ♂ "urogallus," dark colour being browner. ♀ Paler and greyer than ♀ "urogallus" and with more white on underparts. Intermediate between "urogallus" and "uralensis."

Resident.—E. Russia (Simbirsk).

T. urogallus uralensis Menzbier. ♂ Head, neck, upper parts and sides of breast much paler than in ♂ "urogallus," white marks on tail broader, wing coverts, scapulars, and secondaries paler and redder brown, upper tail coverts more broadly tipped white, breast and abdomen white, freckled grey. ♀ Above much paler than ♀ "urogallus" and more white throughout.

Resident.—Russia (S. Ural, Orenburg, Ufa, Samara).

TETRASTES.

Crown feathers elongated; above eye bare spot; tarsus feathered on upper part; inhabit wooded country; nest, depression, generally under a bush; eggs pale rufous yellow, sparingly spotted rufous.

Tetrastes bonasia bonasia (L.). HAZEL HEN. *Fr.* Gélinotte; *Ger.* Haselhuhn; *Ital.* Francolino di monte; *Swed.* Hjerpe.

♂ Above variable grey or light brown, barred on forehead and hind neck, and speckled and marked on rest of upper parts with brown and chestnut, and on some wing coverts, scapulars, and secondaries with black; beneath, throat black, encircled by white; a post-ocular spot white; breast and abdomen brown with broad white centres and margins, sides of breast and flanks chestnut. ♀ like ♂ but chin and throat white. Bill black, browner at tip and base below. Toes reddish grey. Wing ♂ 165-174, ♀ 164-170. Tarsus 35-36. Bill 10-11.

Resident.—Norway to 66°, Sweden to 68°, Lapland, Finland, Russia north to Orel, and in the Ural to Orenburg; and in W. Siberia. Plumage varies considerably; one variety has been called "*T. griseiventris*" Menzbier. It is a dingy grey brown form, with cheeks and throat chestnut, chin white, underparts grey brown, chest distinctly barred brown, breast and abdomen obscurely barred, sometimes a few white spots on breast, otherwise no more white in plumage. It occurs in E. Russian districts (Perm to Orenburg) and in W. Siberia.

T. bonasia rupestris (Brehm). Distinguished from typical "*bonasia*" by having much more reddish brown in plumage, notably on upper parts, and white specks on wings are buff tinged. Wing ♂ 169-183, ♀ 171-180 (H.).

Resident.—Central Germany, France (Vosges and Jura), Alps, Pyrenees, Carpathians, Balkan Peninsula (Montenegro to Bulgaria).

T. bonasia grassmanni (Zedlitz). Intermediate between "*rupestris*" and typical "*bonasia*," greyer on back and rump than "*rupestris*," darker on scapulars than "*bonasia*."

Resident.—Baltic Provinces, Poland, E. Prussia.

PHASIANIDÆ.

Nares bare of feathers ; tarsus also unfeathered.

TETRAOGALLUS.

Birds of Capercaillie size, with a tarsal spur in male ; frequent rocky districts at high elevations, chiefly above tree limit ; nest of dried plants under overhanging rocks ; eggs dull ochreous with an oily green tinge, spotted and blotched with dull dark red.

Tetraogallus caucasicus (Pallas). SNOW PARTRIDGE.

♂ ♀ Above black, vermiculated buff, with patches of cinnamon and pale buff on outer webs of wing coverts and scapulars ; primaries white with brown tips ; hind neck brown, not barred ; crown and nape brownish grey ; foreneck and sides of neck white ; beneath, chest buffy grey, rest of underparts barred black and chestnut, and similarly streaked on flanks. Bill brownish horn, darker at base. Bare skin at base of bill, eye-rim, and bare stripe behind eye yellowish. Legs and feet orange yellow. Wing 265-280 (H.). ♀ and young males have no spur on tarsus.

Resident.—N. Caucasus.

ALECTORIS.

♂ with only an indication of a spur on tarsus ; sexes alike ; bill and feet red ; great runners, but often perch ; eggs laid in a depression in soil, buff slightly marked dull red.

Alectoris græca græca (Meisner). ROCK PARTRIDGE.
Fr. Bartavelle ; *Ger.* Steinhuhn ; *Ital.* Coturnice.

♂ ♀ Above brownish grey with vinous tinge on upper back, scapulars chestnut with grey blue centres ; crown grey with vinous or brown tinge, throat white, surrounded by a black band extending through eye and across lores and forehead ; ear coverts chestnut, forehead and breast grey, abdomen reddish buff ; tail (except central feathers) pale cinnamon ; bars on flanks in successive colours, slate (base), black, white, black, chestnut.

Bill, eye-rim, legs and feet red. Wing ♂ 164-174, ♀ 156-162. Tarsus 43-47. Bill 14-15 (H.).

Resident.—Greece, Ionian Isles, Macedonia, Albania, and across Balkan Peninsula from Bulgaria to Bosnia and Dalmatia; also S. and Middle Italy (Apennines).

A. græca saxatilis (Meyer). Browner with an olive green tinge on upper parts and less vinous on mantle; lores black, ear coverts partly brown.

Resident.—Alpine regions from Savoy to Styria (except Jura), and possibly S.E. Hungary and Carpathians.

A. græca cypriotes Hartert. More vinous on mantle, rump darker grey, ear coverts chestnut, lores white. Wing ♂ 162-169, ♀ 152-159 (H.).

Resident.—Crete, Greek Islands, Cyprus, Asia Minor, Palestine.

Alectoris barbara barbara (Bonnaterre). BARBARY PARTRIDGE.

♂ ♀ Above grey brown; scapulars slate blue with cinnamon margins; crown, nape and collar chestnut, last with white spots; face, throat, and chest grey; breast and abdomen cinnamon; bars on flanks in following order, slate (base), black, cinnamon, white, black, cinnamon. Bill, legs and feet red. Skin round eye pale orange red. Wing ♂ 162-173, ♀ 151-159 (H.).

Resident.—Tunisia and Algeria (north of Atlas); Morocco; Sardinia, Gibraltar.

A. barbara koenigi (Reichenow). Less brownish, more dark grey above, sides of head and neck more bluish grey. Wing ♂ 163-174, ♀ 160-166 (H.).

Resident.—Tenerife, Gomera, and Lanzarote (Canary Islands).

A. barbara spatzi (Reichenow). Paler and more sandy grey above and below. Wing ♂ 156-165, ♀ 147-156 (H.).

Resident.—Deserts of Tunisia and Algeria, south of Atlas.

A. barbara barbata (Reichenow). Above like "barbara"; throat darker, more bluish grey; black bands on flanks broader, white band and cinnamon ends narrower; collar lighter chestnut.

Resident.—Cyrenaica and Tripoli south of Benghazi.

Alectoris rufa rufa (L.). RED-LEGGED PARTRIDGE.
Fr. Perdrix rouge ; *Ger.* Rotfeldhuhn ; *Ital.* Pernice.

♂ ♀ Upper parts olive brown ; forecrown grey, crown and hind neck red brown ; beneath, throat white with a black gorget extending through eyes to lores, chest reddish buff, spotted black, breast blue grey, abdomen cinnamon, flanks barred grey (base), white, black, chestnut. Bill, legs, feet, and skin round eye red. Wing ♂ 157-168, ♀ 150-162 (H.). Tarsus 40-44. Bill 15.

Resident.—S. and C. France, N. Italy, Switzerland, Elba, Britain (introduced 1770), rare in N. France, Holland, Belgium, Luxemburg. Birds from Balearic Islands appear to belong to this form.

A. rufa corsa (Parrot). A doubtful form, said to be smaller. Wing ♂ 158, ♀ 142-155 (H.).

Resident.—Corsica.

A. rufa hispanica (Seoane). Forehead dark slaty grey ; occiput, nape, and upper back darker brown than in "rufa" ; lower back and rump reddish olive-brown. Bill stronger.

Resident.—N. and N.W. Spain and N. Portugal, possibly south to Sierras Guadarrama and de Gata ; Madeira ("maderensis" Tschusi) and Azores, possibly introduced.

A. rufa intercedens (Brehm). Forehead lighter grey than in "rufa" ; red on occiput and neck lighter, back and rump greyer.

Resident.—S. Spain, north to Madrid and Zaragossa, also S. Portugal.

A. rufa australis (Tristram). Bill much larger than in "rufa" or "intercedens," back and upper tail coverts greyer as in "intercedens."

Resident.—Gran Canaria (Canary Islands).

AMMOPERDIX.

Sexes different ; no spurs on tarsus ; small Partridges frequenting low hills in rocky districts and uncultivated regions ; eggs in depression among stones, uniform stone isabelline.

Ammoperdix heyi nicolli Hartert. SEE-SEE PARTRIDGE.

♂ Vinous isabelline distinctly barred dark grey on wings and rump, and faintly on upper tail coverts ; crown with lilac tinge ;

ear coverts white ; chin and patch beneath eye chestnut ; flanks streaked dark and light chestnut and white. Bill orange. Legs and feet yellow. Wing 124-132 (H.). ♀ Sandy grey, barred on head, spotted on rump and upper tail coverts with dark brown.

Resident.—Egypt, Nile Valley (Cairo to Heluan).

The typical race, "*A. h. heyi*," is found from Sinai Peninsula to Jordan Valley.

FRANCOLINUS.

Tail of 14 feathers ; throat feathered ; tarsus of ♂ spurred (one or two) : about Partridge size, frequent bush country ; nest in a hollow on ground ; eggs yellowish brown, with a few white shell marks.

Francolinus bicalcaratus ayesha Hartert.

♂ Above brown, vermiculated black ; crown buffy brown, forehead black ; wing coverts, scapulars, and upper back with broad buff streaks on both margins ; beneath chestnut, with double buff or white streaks enclosing drop-shaped black spots ; throat white ; two spurs on tarsus. Bill greenish brown, yellowish at sides and below. Legs and feet yellowish green. Wing ♂ 175-185, ♀ 155-166. Tarsus 56-60. Bill 20-21 (H.). ♀ has no spurs on tarsus ; brown on sides of head duller.

Resident.—Morocco (Mogador and Rabat to Casa Blanca).

The typical race "*F. b. bicalcaratus*" is W. African.

PERDIX.

Tail of 16-18 feathers ; no tarsal spur ; nest on ground ; eggs olive brown, unspotted.

Perdix perdix perdix (L.). PARTRIDGE. *Fr.* Perdrix ; *Ger.* Rebhuhn ; *Ital.* Starna ; *Swed.* Rapphöna.

♂ Above brown, vermiculated and barred with red brown on back and tail coverts, scapulars and wing coverts with white or buff shaft streaks ; head (except crown, which is brown streaked lighter brown) pale cinnamon ; breast grey, vermiculated black and chestnut ; abdomen white ; flank-bars, horse-shoe patch on lower breast, and tail feathers (except central pair, which are buff) chestnut ; tail 18 feathers. Ring round and naked patch behind eye red. Bill greenish grey. Legs and feet

bluish grey. Wing ♂ 153-163, ♀ 145-158. Tarsus 42-47. Bill 13-14. ♀ Horse-shoe mark usually smaller, and sometimes replaced by white.

Resident.—British Isles, Central Europe from S. Sweden to Alps, France south to Cevennes and Auvergne (except Brittany and Normandy), Switzerland, Poland, Austria to W. Rumania, Macedonia and N. Greece.

P. perdix sphagnetorum (Altum). Darker than "perdix," upper breast very dark grey, scapulars and wing coverts almost black with chestnut bars and freckles, flank-bars darker, horse-shoe very deep chestnut. Wing ♂ 155-160, ♀ 152 (H.).

Resident.—N. Holland from Drenthe to N.W. Germany (Meppen) in peat mosses.

P. perdix armoricana Hartert. Deep rusty brown above, grey colour absent; upper breast with brownish tinge.

Resident.—Brittany and Normandy.

P. perdix hispaniensis Reichenow. Breast darker grey than in "perdix"; horse-shoe very deep chestnut.

Resident.—Pyrenees and N.W. Spain, from Catalonia to Galicia.

P. perdix italica Hartert. Above lighter and browner than in "perdix"; upper breast lighter grey.

Resident.—Italy.

P. perdix lucida (Altum). Above greyer, less brown than "perdix," intermediate between "perdix" and "robusta." Wing ♂ 160-168 (H.).

Resident.—E. Prussia, Poland, Baltic Provinces to Petrograd and Pskov.

P. perdix robusta Homeyer and Tancre. Above much greyer than "perdix" and barring on lower back narrower and darker; lighter grey on upper breast. Wing ♂ 160-170 (H.).

Resident.—Russia from Ural and Moscow south to Caucasus and E. Rumania; also W. Siberia.

COTURNIX.

No spur on tarsus; sexes alike; plumage soft; nest on ground; eggs numerous, spotted or blotched.

Coturnix coturnix coturnix (L.). QUAIL. *Fr.* Caille; *Ger.* Wachtel; *Ital.* Quaglia; *Swed.* Vaktel.

♂ Above brown, each feather with buff shaft streak, and two bars and tip rufous; three buff streaks on crown; throat whitish; a black patch on chin; a black band, with rufous band below it, at base of throat; breast pale rufous with white streaks, rest of underparts buffy white, flanks rufous, streaked buff. Bill brown, black at tip, pale at base below. Legs and feet light brown. Wing ♂ ♀ generally 108-111, but variable 104-117. Tarsus 24-26. Bill 9. ♀ Chin and throat buffy white, no black band, breast reddish buff, spotted dark brown.

Breeds.—British Isles; Continental Europe from 65° in Scandinavia and N. Russia, and 60° in Urals, south to Mediterranean and its Islands; N. Africa (Morocco to Egypt); also N. Asia. Migratory; winters chiefly in C. and S. Africa, Arabia, and India, but many remain in Mediterranean Countries.

C. coturnix conturbans Hartert. Resembles "*C. c. africana*" (which is smaller in size, and with face, throat, and chest red in male), but has upper wing coverts and inner secondaries more rusty cinnamon brown and less olivaceous than in "*africana*." Wing usually 100-104.

Resident.—Azores.

C. coturnix confisa Hartert. Larger than "*conturbans*," upper parts lighter and shaft streaks wider, upper wing coverts darker, not so cinnamon brown; throat shows more white and middle of abdomen whiter. Wing ♂ 106-112, ♀ 107-113 (H.).

Resident.—Madeira and Canaries (typical "*coturnix*" also occurs there on migration).

PHASIANUS.

Tail long, of 18 feathers; male with spur on tarsus and sides of head naked, lobed below eye in spring; nest on ground; eggs numerous, olive brown to brownish grey.

Phasianus colchicus colchicus L. PHEASANT. *Fr.* Faisan; *Ger.* Jagd-Fasan; *Ital.* Fagiano; *Swed.* Fasan.

♂ Coppery maroon with purple tips to feathers, which are emarginate at tip of shaft, wings brown marked with some purple feathers, tail olive yellow barred black, crown green, throat and neck darker with purple reflections, especially on sides of neck, abdomen bluish black. Bill brownish yellow. Bare skin on

head red. Legs and feet brownish horn colour. Wing ♂ 232-256, ♀ 210-220. Tarsus 65-70. Bill 28-30. ♀ Brown, feathers with black angular centres, bordered by red brown and tipped buff; crown, neck, and chest with purple gloss, breast and abdomen light brown.

Resident.—W. Transcaucasia, south-east and east of Black Sea, north to Araxes River. From there introduced in ancient times into Greece and later over almost all Europe, north to S. Sweden and Christiania.

P. colchicus septentrionalis Lorenz. ♂ Above paler, more golden than "*colchicus*," purple tips glossed green, throat and neck green with little purple gloss except on sides of neck. ♀ like typical female but paler.

Resident.—N. Slopes of Caucasus, especially valleys of Kuban, Terek, and Kuma, and W. Coast of Caspian south to Apcheron Peninsula and north to Volga mouth.

NUMIDA.

Guinea-fowl. Head and neck bare; on the crown a blunt helmet, and at each angle of bill a wattle; tail of 16 feathers; tail coverts nearly as long as the tail; no spur on tarsus; sexes alike; young different from adults.

Numida sabyi Hartert.

Black with brown shade on upper parts and white ocelli, outer margins of inner primaries and secondaries with jagged white cross bars; differs from domesticated Guinea-fowl ("*N. meleagris*") in lacking the vinous grey collar, in "*sabyi*" the ocellated feathers extend to the middle of the neck; on occiput there is a bunch of antrorse feathers covering helmet from behind. Bill red brown, horny white at tip. Bare skin round eye slaty; helmet brown; wattles red. Legs and feet dark brown. Wing 275. Tarsus 77 (H.).

Probably a resident in W. Morocco between rivers Bou-Regreg and Sebou, but only one example obtained up to date.

INDEX

In this Index the Genus of the Species or Sub-species is given within brackets.

A

abietinus (Phylloscopus), 91
 Acanthis, 18
 Accentor, Alpine, 138
 Accipiter, 196
 Accipitres, 177
 Acrocephalus, 100
 acuminata (Tringa), 272
 acuta (Anas), 223
 adalberti (Aquila), 186
 adamsi (Colymbus), 249
 Aegithalus, 77
 ægra (Enanthe), 129
 Ægyptius, 204
 ægyptiaca (Alopochen), 218
 (Streptopelia), 254
 ægyptius (Caprimulgus), 151
 (Centropus), 167
 (Milvus), 198
 (Pluvianus), 260
 æruginosus (Circus), 192
 æsalon (Falco), 182
 æthiopicus (Threskiornis), 207
 affinis (Larus), 300
 (Micropus), 149
 (Sylvia), 108
 africana (Coturnix), 333
 (Emberiza), 37
 (Fringilla), 27
 africanus (Carduelis), 16
 agricola (Acrocephalus), 102
 Agrobates, 113
 Alæmon, 52
 Alauda, 51
 Alaudidæ, 42
 alaudipes (Alæmon), 52
 alba (Egretta), 209

alba (Flammea), 176
 (Motacilla), 63
 albellus (Mergus), 235
 albeola (Bucephala), 228
 albicilla (Haliaëtus), 199
 albicollis (Muscicapa), 90
 albididorsalis (Sterna), 293
 albidus (Astur), 195
 albifrons (Anser), 215
 (Enanthe), 125
 albistriata (Sylvia), 111
 Alca, 309
 Alcæ, 309
 Alcedinidæ, 155
 Alcedo, 155
 alchata (Pterocles), 256
 Alcidiæ, 309
 alcyon (Ceryle), 156
 Alektorides, 313
 Alectoris, 328
 alexandrinus (Charadrius), 263
 (Passer), 31
 algeriensis (Ammomanes), 46
 (Lanius), 84
 (Phœnicurus), 132
 algirus (Turdus), 122
 aliena (Rhodopechys), 22
 Alle, 310
 alle (Alle), 310
 allenbyi (Charadrius), 263
 alleni (Porphyrio), 321
 Alopochen, 218
 alpestris (Otocorys), 54
 (Turdus), 121
 alpicola (Montifringilla), 29
 alpina (Tringa), 270
 alpinus (Aegithalus), 79
 (Picoides), 163

- aluco (*Strix*), 175
 amantum (*Erythropsiza*), 22
 americana (*Anas*), 223
 americanus (*Coccyzus*), 166
 Ammomanes, 45
 Amnoperdix, 330
 Ampelidæ, 87
 Ampelis, 87
 Anas, 220
 Anatidæ, 213
 anatum (*Falco*), 178
 anglica (*Sterna*), 292
 anglicus (*Dryobates*), 159
 anglorum (*Regulus*), 80
 angustirostris (*Anas*), 223
 Anous, 296
 Anser, 214
 anser (*Anser*), 214
 Anseres, 213
 Anthoscopus, 79
 Anthropoides, 316
 Anthus, 54
 antiquorum (*Phœnicopterus*), 212
 apétzii (*Calandrella*), 45
 apiaster (*Merops*), 152
 apivorus (*Pernis*), 200
 apricarius (*Charadrius*), 265
 apus (*Micropus*), 147
 aquaticus (*Acrocephalus*), 103
 (*Cinclus*), 143
 (*Rallus*), 317
 Aquila, 185
 Aquilidæ, 185
 aquitanicus (*Tetrao*), 326
 arabs (*Eupodotis*), 315
 arborea (*Lullula*), 50
 arctica (*Fratercula*), 312
 arcticus (*Colymbus*), 250
 Ardea, 208
 Ardeidæ, 207
 Ardeola, 210
 Arenaria, 268
 arenaria (*Calidris*), 275
 arenicola (*Streptopelia*), 254
 arenicolor (*Ammomanes*), 46
 argentatus (*Larus*), 298
 argentea (*Enanthe*), 124
 armorica (*Sylvia*), 112
 armoricana (*Perdix*), 332
 arquata (*Cisticola*), 115
 arquatus (*Numenius*), 285
 arrigonii (*Astur*), 195
 arrigonii (*Buteo*), 190
 (*Passer*), 32
 arsinoe (*Pycnonotus*), 88
 arundinaceus (*Acrocephalus*), 100
 arvensis (*Alauda*), 51
 ascalaphus (*Bubo*), 169
 asiaticus (*Charadrius*), 264
 Asio, 170
 assimilis (*Parus*), 76
 (*Puffinus*), 243
 Astur, 195
 ater (*Parus*), 72
 aterrimus (*Turdus*), 122
 atlantis (*Larus*), 300
 atlas (*Erethacus*), 138
 (*Otocorys*), 53
 (*Parus*), 73
 (*Sitta*), 68
 atra (*Fulica*), 321
 atricapilla (*Muscicapa*), 89
 (*Sylvia*), 107
 atricapillus (*Astur*), 196
 (*Garrulus*), 8
 (*Parus*), 76
 atrifrons (*Charadrius*), 263
 atrigularis (*Prunella*), 139
 (*Turdus*), 120
 atthis (*Alcedo*), 155
 audouini (*Larus*), 301
 Auk, Little, 310
 aurantiiventris (*Chloris*), 15
 aureola (*Emberiza*), 35
 aureus (*Turdus*), 116
 auricularis (*Otogyps*), 204
 auritus (*Podiceps*), 247
 australis (*Alectoris*), 330
 Avocet, 283
 avosetta (*Recurvirostra*), 283
 ayesha (*Francolinus*), 331
 azorensis (*Turdus*), 121
 azorica (*Columba*), 253
 azoricus (*Regulus*), 80

B

- bactriana (*Pica*), 5
 badius (*Lanius*), 85
 baicalensis (*Parus*), 77
 bairdi (*Tringa*), 272
 balcanica (*Otocorys*), 54

- balcanicus (*Carduelis*), 16
 (*Dryobates*), 159
 (*Sturnus*), 11
 balearica (*Loxia*), 25
 (*Muscicapa*), 89
 (*Sylvia*), 113
 balearicus (*Parus*), 71
 bangsi (*Cuculus*), 165
 barbara (*Alectoris*), 329
 (*Petronia*), 30
 barbata (*Alectoris*), 329
 barbatus (*Gypaëtus*), 202
 (*Pycnonotus*), 88
 barnesi (*Enanthe*), 127
 Bartramia, 269
 bassana (*Sula*), 239
 Bec-Eater, 152
 beema (*Motacilla*), 60
 belisarius (*Aquila*), 186
 bella (*Sylvia*), 111
 bengalensis (*Sterna*), 293
 benghalensis (*Rostratula*), 289
 bernicla (*Branta*), 217
 bertheloti (*Anthus*), 55
 bewicki (*Cygnus*), 214
 bianchii (*Parus*), 77
 biarmicus (*Falco*), 179
 (*Panurus*), 81
 bicalcaratus (*Francolinus*), 331
 bifasciata (*Loxia*), 26
 bilopha (*Otocorys*), 54
 bimaculata (*Melanocorypha*), 43
 Bittern, 212
 Little, 211
 Blackbird, 121
 Blackcap, 107
 Blackcock, 325
 blakistoni (*Anthus*), 58
 Bluethroat, Red-spotted, 135
 White-spotted, 136
 bollii (*Columba*), 253
 bonasia (*Tetrastes*), 327
 bonelli (*Phylloscopus*), 94
 borealis (*Numenius*), 286
 (*Parus*), 76
 (*Phylloscopus*), 95
 (*Puffinus*), 244
 (*Somateria*), 232
 (*Troglodytes*), 141
 boschas (*Anas*), 220
 Botaurus, 211
 boydi (*Puffinus*), 243
 brachydactyla (*Calandrella*), 44
 (*Certhia*), 66
 brachyrhynchus (*Anser*), 216
 brachyura (*Galerida*), 48
 Brambling, 28
 brandti (*Garrulus*), 8
 (*Otocorys*), 54
 Branta, 217
 brehmi (*Turdus*), 118
 brehmorum (*Micropus*), 148
 brevipes (*Accipiter*), 197
 (*Totanus*), 280
 brevirostris (*Carduelis*), 16
 britannica (*Certhia*), 65
 (*Sitta*), 68
 britannicus (*Carduelis*), 16
 (*Cinclus*), 142
 (*Lyrurus*), 325
 (*Parus*), 73
 brookei (*Falco*), 178
 brutius (*Passer*), 32
 Bubo, 168
 bubo (*Bubo*), 168
 Bucephala, 227
 buchanani (*Emberiza*), 36
 Bullfinch, 22
 Trumpeter, 21
 bulweri (*Bulweria*), 245
 Bulweria, 245
 Bunting, Black-headed, 34
 Cirl, 36
 Corn, 33
 House, 38
 Lapland, 40
 Little, 38
 Meadow, 37
 Pine, 34
 Reed, 39
 Rustic, 38
 Snow, 41
 Yellow-breasted, 35
 Bustard, Great, 313
 Houbara, 315
 Little, 314
 Butco, 189
 buteo (*Buteo*), 189
 buturlini (*Certhia*), 66
 (*Dryobates*), 161
 buvryi (*Coccothraustes*), 14
 Buzzard, 189
 Honey, 200
 Rough-legged, 191

C

- cabaret (*Acanthis*), 20
 cabreræ (*Turdus*), 121
 cachinnans (*Larus*), 299
 cæruleus (*Elanus*), 200
 (*Parus*), 70
 (*Porphyrio*), 320
 cæsia (*Emberiza*), 37
 (*Sitta*), 68
 calandra (*Emberiza*), 33
 (*Melanocorypha*), 42
 Calandrella, 44
 Calcarius, 40
 Calidris, 275
 calidus (*Falco*), 178
 caligata (*Hypolais*), 105
 calliope (*Luscinia*), 135
 campestris (*Anthus*), 55
 (*Motacilla*), 61
 canariensis (*Asio*), 170
 (*Columba*), 251
 (*Corvus*), 2
 (*Dryobates*), 160
 (*Falco*), 185
 (*Phylloscopus*), 92
 canarius (*Serinus*), 21
 Canary, 21
 candicans (*Falco*), 180
 candidus (*Dryobates*), 159
 caniceps (*Carduelis*), 17
 cannabina (*Acanthis*), 18
 canneti (*Emberiza*), 39
 canorus (*Cuculus*), 165
 cantarella (*Alauda*), 51
 canus (*Larus*), 300
 (*Picus*), 158
 canutus (*Tringa*), 273
 caparoch (*Surnia*), 174
 capellanus (*Corvus*), 3
 capensis (*Asio*), 171
 Capercaillie, 326
 Caprimulgi, 149
 Caprimulgidæ, 149
 Caprimulgus, 149
 carbo (*Phalacrocorax*), 236
 Carduelis, 15
 carduelis (*Carduelis*), 15
 Carine, 172
 carlo (*Falco*), 184
 (*Micropus*), 148
 carolina (*Porzana*), 318
 carolinæ (*Galerida*), 50
 carolinensis (*Anas*), 221
 Carpodacus, 23
 carthaginis (*Galerida*), 48
 caryocatactes (*Nucifraga*), 6
 Casarca, 219
 casarca (*Casarca*), 219
 caspia (*Sterna*), 293
 caspius (*Anthoscopus*), 80
 castaneiceps (*Emberiza*), 38
 castro (*Oceanodroma*), 241
 caucasica (*Carine*), 173
 (*Certhia*), 66
 (*Cryptoglaux*), 172
 (*Galerida*), 47
 (*Loxia*), 26
 (*Prunella*), 139
 (*Sitta*), 68
 causicus (*Anthus*), 58
 (*Cinclus*), 143
 (*Dryobates*), 162
 (*Erithacus*), 138
 (*Sturnus*), 11
 (*Tetraogallus*), 328
 caudacuta (*Chætura*), 149
 caudacutus (*Pterocles*), 256
 caudatus (*Aegithalus*), 77
 Centropus, 167
 Certhia, 65
 Certhiidae, 65
 certhiola (*Locustella*), 99
 cervicalis (*Garrulus*), 8
 cervinus (*Anthus*), 56
 Ceryle, 155
 cetti (*Cettia*), 97
 Cettia, 96
 cettioides (*Cettia*), 97
 Chætura, 149
 Chaffinch, 27
 Charadriidae, 261
 Charadrius, 261
 Chat, Black-eared, 125
 Black-throated, 125
 cherrug (*Falco*), 179
 Chersophilus, 52
 Chettusia, 267
 Chiff-chaff, 91
 Chlamydotis, 315
 Chloris, 14
 chloris (*Chloris*), 14
 chloropus (*Gallinula*), 320
 chlorotica (*Chloris*), 15

- Chough, 9
 Alpine, 9
 chrysætus (Aquila), 185
 chrysocercus (Merops), 152
 cia (Emberiza), 37
 Ciconia, 205
 ciconia (Ciconia), 205
 Ciconiidae, 205
 cinarens (Alauda), 51
 Cinclus, 142
 cinclus (Cinclus), 142
 cinctus (Parus), 75
 cinerea (Ardea), 208
 (Motacilla), 62
 (Terekia), 281
 cinereocapilla (Motacilla), 61
 cinereus (Lagopus), 324
 cioides (Emberiza), 38
 Circaetus, 201
 Circus, 192
 cirrus (Emberiza), 36
 cirtensis (Buteo), 192
 (Corvus), 4
 Cisticola, 115
 cisticola (Cisticola), 115
 citreola (Motacilla), 62
 citrinella (Emberiza), 33
 (Spinus), 17
 Clamator, 165
 clanga (Aquila), 187
 Clangula, 228
 clangula (Bucephala), 227
 clarkii (Turdus), 118
 cleopatra (Merops), 153
 clot-bey (Rhamphocorys), 42
 clypeata (Spatula), 224
 Coccothraustes, 13
 coccothraustes (Coccothraustes), 13
 Coccyzus, 166
 coelebs (Fringilla), 27
 colchicus (Dryobates), 161
 (Phasianus), 333
 collaris (Corvus), 4
 (Prunella), 138
 collurio (Lanius), 86
 collybita (Phylloscopus), 91
 Columba, 251
 Columbæ, 251
 columbarius (Falco), 182
 Columbidae, 251
 Colymbidae, 249
 Colymbus, 249
 Comatibis, 207
 comminatus (Dryobates), 161
 communis (Parus), 75
 (Sylvia), 107
 compiler (Emberiza), 40
 conboschas (Anas), 220
 concolor (Falco), 181
 confisa (Coturnix), 333
 conspicillata (Sylvia), 111
 conturbans (Coturnix), 333
 cooki (Cyanopica), 6
 Coot, 321
 Crested, 321
 Coraciæ, 154
 Coracias, 154
 Coraciidae, 154
 corax (Corvus), 1
 Cormorant, 236
 Pigmy, 237
 Corn-Crake, 319
 cornix (Corvus), 2
 coronatus (Pterocles), 257
 corone (Corvus), 3
 corsa (Alectoris), 330
 (Certhia), 66
 (Luscinia), 135
 (Sylvia), 113
 corsicana (Loxia), 26
 (Spinus), 18
 corsicanus (Garrulus), 7
 corsus (Parus), 70
 Corvidæ, 1
 Corvus, 1
 Coturnix, 332
 coturnix (Coturnix), 332
 Courser, 260
 coutelli (Anthus), 58
 Crane, Baillon's, 318
 Carolina, 318
 Little, 318
 Spotted, 317
 Crane, 316
 Denoiselle, 316
 crassirostris (Acrocephalus), 101
 Sylvia, 106
 Crateropus, 116
 crecca (Anas), 220
 Creeper, Tree, 65
 Wall, 67
 cretorum (Garrulus), 8
 Crex, 319
 crex (Crex), 319

crispus (Pelecanus), 238
 crissoleucus (Picoides), 163
 cristata (Fulica), 321
 (Galerida), 46
 cristatus (Parus), 74
 (Podiceps), 246
 Crossbill, 25
 Parrot, 26
 Two-barred, 26
 Crow, Carrion, 3
 Hooded, 2
 Cryptoglaux, 171
 Cuckoo, 165
 Black-billed, 166
 Great Spotted, 166
 Yellow-billed, 166
 Cuculi, 165
 Cuculidæ, 165
 cucullatus (Mergus), 235
 (Telephonus), 86
 Cuculus, 165
 Curlew, 285
 Eskimo, 286
 Slender-billed, 286
 Stone, 258
 curnicus (Charadrius), 262
 curruca (Sylvia), 108
 Cursoridæ, 259
 Cursorius, 260
 curvirostra (Loxia), 25
 cyanecula (Luscinia), 136
 cyaneus (Circus), 193
 Cyanopica, 5
 cyanurus (Tarsiger), 131
 cyanus (Cyanopica), 6
 (Parus), 72
 Cygnus, 213
 cygnus (Cygnus), 213
 cypriaca (Galerida), 47
 cypriotes (Alectoris), 329
 cyprius (Otus), 170
 Cypseli, 147
 Cypselidæ, 147
 cyrenaicæ (Galerida), 50

D

dacotæ (Falco), 185
 (Saxicola), 130
 danfordi (Dryobates), 161
 dartfordiensis (Sylvia), 112
 daurica (Hirundo), 144
 decaocto (Streptopelia), 255
 degener (Parus), 71
 deichleri (Galerida), 49
 (Turdus), 117
 Delichon, 145
 deltæ (Prinia), 115
 deserti (Ammomanes), 45
 (Enanthe), 125
 (Sylvia), 109
 deserticola (Sylvia), 112
 desertorum (Alæmon), 52
 (Bubo), 169
 (Buteo), 190
 (Caprimulgus), 151
 desmaresti (Phalacrocorax), 237
 diluta (Riparia), 146
 Dipper, 142
 discors (Anas), 221
 distinctus (Edicnemus), 259
 Diver, Black-throated, 250
 Great Northern, 249
 Red-throated, 250
 White-billed Northern, 249
 dodsoni (Lanius), 84
 dofleini (Picus), 157
 dumbrowskii (Motacilla), 60
 domesticus (Passer), 30
 dominicus (Charadrius), 265
 Dotterel, 264
 dougalli (Sterna), 295
 Dove, Ring, 252
 Rock, 251
 Stock, 252
 Turtle, 253
 dresseri (Parus), 76
 Dryobates, 158
 Dryocopus, 163
 dubius (Charadrius), 262
 Duck, Buffel-headed, 228
 Harlequin, 230
 Long-tailed, 228
 Marbled, 223
 Scaup, 226
 Tufted, 226
 White-eyed, 225
 White-headed, 233
 dukhunensis (Motacilla), 64
 dumetorum (Acrocephalus), 102
 Dunlin, 270
 duponti (Chersophilus), 52

E

Eagle, Bonelli's, 188
 Booted, 189
 Golden, 185
 Imperial, 186
 Lesser Spotted, 187
 Short-toed, 201
 Spotted, 187
 White-tailed, 199
eburnea (*Pagophila*), 305
Egret, Little, 209
Egretta, 209
Eider, 231
 King, 232
 Steller's, 231
elæica (*Hypolais*), 105
Elanus, 200
elegans (*Lanius*), 84
 (*Loxia*), 26
elenæ (*Parus*), 77
eleonoræ (*Falco*), 181
Emberiza, 33
enucleator (*Pinicola*), 24
epops (*Upupa*), 153
eremita (*Comatibis*), 207
Ereunetes, 274
Erithacus, 137
erlangeri (*Falco*), 179
 (*Galerida*), 49
 (*Phylloscopus*), 95
ernesti (*Flammea*), 176
erythrinus (*Carpodacus*), 24
erythrogaster (*Phœnicurus*), 134
erythrogenys (*Emberiza*), 34
erythrophthalmus (*Coccyzus*),
 166
erythropus (*Anser*), 215
Erythrospiza, 21
eunomus (*Turdus*), 119
Eupodotis, 314
europæa (*Pyrrhula*), 23
 (*Sitta*), 67
europæus (*Aegithalus*), 77
 (*Caprimulgus*), 149
eversmanni (*Phylloscopus*), 93
excelsa (*Columba*), 252
excelsus (*Parus*), 70
excubitor (*Lanius*), 83
exigua (*Petronia*), 30
exilipes (*Acanthis*), 20
exsul (*Phylloscopus*), 92

F

fabalis (*Anser*), 216
feroensis (*Gallinago*), 288
falcinellus (*Limicola*), 276
 (*Plegadis*), 206
Falco, 177
Falcon, *Eleonora's*, 181
 Greenland, 180
 Iceland, 180
 Jer, 180
 Lanner, 178
 Peregrine, 177
 Red-footed, 183
 Saker, 179
Falconidæ, 177
familiaris (*Agrobates*), 114
 (*Certhia*), 65
 (*Lullula*), 50
farøensis (*Somateria*), 232
faroensis (*Sturnus*), 10
fasciatus (*Garrulus*), 7
 (*Hieraëtus*), 188
feræ (*Pterodroma*), 244
feldeggii (*Falco*), 179
 (*Motacilla*), 62
ferina (*Nyroca*), 225
ferox (*Buteo*), 191
ferruginea (*Fringa*), 269
Fieldfare, 117
Finch, *Citril*, 17
 Serin, 21
 Snow, 29
finschi (*Ceanthe*), 126
Firecrest, 81
Flamingo, 212
Flammea, 176
flammeus (*Asio*), 170
flava (*Motacilla*), 59
 (*Otocorys*), 53
flavescens (*Lullula*), 51
flavipes (*Totanus*), 278
flavirostris (*Acanthis*), 19
 (*Rynchops*), 306
floweri (*Pterocles*), 257
fluckerigeri (*Passer*), 32
fluviatilis (*Locustella*), 98
 (*Podiceps*), 248
Flycatcher, *Collared*, 90
 Pied, 89
 Red-breasted, 90
 Spotted, 88

Francolinus, 331
 Fratercula, 312
 Fringilla, 27
 Fringillidæ, 13
 frugilegus (Corvus), 3
 fuertaventuræ (Chlamydotis), 315
 Fulica, 321
 fulicarius (Phalaropus), 282
 fuligula (Nyroca), 226
 Fulmar, 245
 Fulmarus, 245
 fulvescens (Aquila), 187
 fulvus (Charadrius), 266
 (Crateropus), 116
 (Gyps), 203
 funerea (Cryptoglaux), 171
 fusca (Locustella), 99
 (Oidemia), 229
 fuscata (Sterna), 296
 fuscatus (Phylloscopus), 96
 (Turdus), 119
 fuscicollis (Tringa), 273
 fuscus (Larus), 299
 (Totanus), 277

G

Gadwall, 222
 gaetkei (Luscinia), 136
 galactotes (Agrobates), 113
 Galerida, 46
 galilejensis (Micropus), 149
 Galli, 322
 galliæ (Accipiter), 196
 gallicus (Circaëtus), 201
 (Cursorius), 260
 Gallinago, 287
 gallinago (Gallinago), 287
 gallinarum (Astur), 195
 Gallinula, 319
 gallinula (Limnocryptes), 288
 Gallinule, Allen's, 321
 Green-backed, 320
 Purple, 320
 Gannet, 239
 Garganey, 221
 Garrulus, 6
 garrulus (Ampelis), 87
 (Coracias), 154
 garzetta (Egretta), 209
 gelastes (Larus), 302
 gentilis (Astur), 195
 germanicus (Serinus), 21
 geyri (Locustella), 98
 gibraltariensis (Phœnicurus), 133
 githaginea (Erythrospiza), 21
 glacialis (Fulmarus), 245
 glandarius (Clamator), 166
 (Garrulus), 7
 gracilirostris (Flammea), 177
 Glareola, 260
 glareola (Totanus), 280
 Glaucidium, 173
 glaux (Carine), 173
 godmani (Puffinus), 243
 Godwit, Bar-tailed, 284
 Black-tailed, 284
 Goldcrest, 80
 Golden Eye, 227
 Goldfinch, 15
 golzii (Luscinia), 135
 Goosander, 233
 Goose, Barnacle, 217
 Bean, 216
 Brent, 217
 Egyptian, 218
 Grey Lag, 214
 Lesser White-fronted, 215
 Pink-footed, 216
 Red-breasted, 218
 Snow, 216
 White-fronted, 215
 Goshawk, 195
 grabæ (Fratercula), 313
 gracilis (Prinia), 115
 graculus (Phalacrocorax), 236
 (Pyrrhocorax), 9
 græca (Alectoris), 328
 græcus (Sturnus), 11
 grandis (Gypaëtus), 202
 granti (Accipiter), 197
 (Sturnus), 11
 grassmanni (Tetrastes), 327
 gravis (Puffinus), 243
 Grebe, Black-necked, 248
 Great Crested, 246
 Little, 248
 Red-necked, 247
 Slavonian, 247
 Greenfinch, 14
 Greenshank, 279
 gregaria (Chettusia), 267
 Gressores, 204
 griseigena (Podiceps), 247

griseiventris (*Tetrastes*), 327
 griseus (*Anthus*), 55
 (*Macrorhamphus*), 276
 (*Puffinus*), 244
 grisola (*Muscicapa*), 88
 Grosbeak, Pine, 24
 Scarlet, 24
 Grouse, Red, 323
 Willow, 323
 Gruide, 316
 grus (*Megalornis*), 316
 grylle (*Uria*), 311
 guillelmi (*Alauda*), 52
 Guillemot, 311
 Black, 311
 Brünnich's, 311
 Gull, Adriatic, 303
 Audouin's, 301
 Black-headed, 304
 Bonaparte's, 303
 Common, 300
 Glaucous, 301
 Great Black-backed, 298
 Great Black-headed, 302
 Herring, 298
 Iceland, 301
 Ivory, 305
 Lesser Black-backed, 299
 Little, 304
 Ross's, 297
 Sabine's, 297
 Slender-billed, 302
 gustavi (*Anthus*), 57
 guttata (*Flammea*), 176
 Gypætus, 202
 Gyps, 203

H

Hæmatopus, 289
 Halcyones, 154
 Haliaëtus, 199
 haliaëtus (*Pandion*), 201
 halophila (*Enanthe*), 128
 Harrier, Hen, 193
 Marsh, 192
 Montagu's, 194
 Pale, 194
 harterti (*Acanthis*), 19
 (*Alauda*), 52
 (*Buteo*), 191
 (*Circus*), 193

harterti (*Cisticola*), 115
 (*Dryobates*), 159
 (*Galerida*), 49
 (*Parus*), 71
 Hawfinch, 13
 Hazel Hen, 327
 hebridensis (*Turdus*), 118
 Hedge-Sparrow, 139
 heinei (*Calandrella*), 45
 heineken (*Sylvia*), 107
 heliaca (*Aquila*), 186
 hellmayri (*Petronia*), 30
 helveticus (*Lagopus*), 131
 Hemipode, Andalusian, 322
 hemprichi (*Larus*), 305
 Herbivocula, 96
 hermonensis (*Calandrella*), 44
 Heron, Buff-backed, 210
 Common, 208
 Great White, 209
 Night, 210
 Purple, 208
 Squacco, 210
 heyi (*Ammoperdix*), 331
 hiaticula (*Charadrius*), 261
 hibernans (*Saxicola*), 131
 hibernicus (*Cinclus*), 142
 (*Garrulus*), 7
 (*Parus*), 73
 Hieraëtus, 188
 hilgerti (*Galerida*), 50
 Himantopus, 283
 himantopus (*Himantopus*), 283
 hirtensis (*Troglodytes*), 141
 Hirundinidæ, 143
 Hirundo, 144
 hirundo (*Sterna*), 294
 hispana (*Loxia*), 25
 hispanica (*Alectoris*), 330
 (*Enanthe*), 125
 hispaniensis (*Perdix*), 332
 (*Sitta*), 68
 hispaniolensis (*Passer*), 31
 hispanus (*Bubo*), 168
 (*Corvus*), 1
 (*Dryobates*), 159
 (*Turdus*), 121
 Histrionicus, 230
 histrionicus (*Histrionicus*), 230
 Hobby, 181
 holboellii (*Acanthis*), 20
 (*Podiceps*), 247

homeyeri (Lanius), 83
 (Sitta), 68
 homochroa (Ænanthe), 125
 Hoopoe, 153
 Hoplopterus, 268
 hornemanni (Acanthis), 20
 hortensis (Sylvia), 106
 hortorum (Dryobates), 161
 hortulana (Emberiza), 36
 hudsonicus (Numenius), 286
 Hydrochelidon, 290
 hyemalis (Clangula), 228
 hyperboreus (Anser), 216
 (Lagopus), 324
 (Larus), 301
 Hypolais, 103
 hypoleuca (Pelagodroma), 241
 hypoleucus (Totanus), 281
 hyrcanus (Erithacus), 138
 (Troglodytes), 142

I

iberiæ (Motacilla), 61
 Ibididæ, 205
 ibis (Ardeola), 210
 Ibis, Glossy, 206
 Sacred, 207
 ichnusæ (Garrulus), 7
 ichthyaëtus (Larus), 302
 icterina (Hypolais), 103
 icterops (Sylvia), 108
 ignicapillus (Regulus), 81
 iliacus (Turdus), 118
 illyricus (Micropus), 148
 immer (Colymbus), 249
 incanus (Totanus), 280
 indica (Saxicola), 131
 indigena (Carine), 172
 infaustus (Perisoreus), 9
 inornata (Sylvia), 111
 inornatus (Phylloscopus), 95
 inquieta (Scotocerca), 114
 insularum (Buteo), 190
 (Edicnemus), 259
 intercedens (Alectoris), 330
 intermedia (Porzana), 318
 interni (Regulus), 81
 interpres (Arenaria), 268
 irbii (Aegithalus), 78
 isabellina (Ammomanes), 46
 isabellina (Ænanthe), 127
 (Streptopelia), 254
 islandica (Bucephala), 227
 islandicus (Corvus), 1
 (Troglodytes), 141
 islandorum (Lagopus), 324
 islandus (Falco), 180
 ispida (Alcedo), 155
 italiæ (Aegithalus), 78
 (Dryobates), 159
 (Passer), 31
 italica (Perdix), 332
 italicus (Parus), 76
 Ixobrychus, 211

I

Jackdaw, 4
 Jay, 7
 Siberian, 9
 jordansi (Cisticola), 115
 jourdaini (Lanius), 86
 (Phalaropus), 282
 jubileus (Turdus), 117
 jugurtha (Falco), 182
 junoniæ (Columba), 253
 Jynx, 164

K

kabylorum (Troglodytes), 141
 kamtschatkensis (Dryobates), 162
 kaukasicus (Corvus), 3
 Kestrel, 184
 Lesser, 183
 Kingfisher, 155
 Kite, 197
 Black, 198
 Black-winged, 200
 Kittiwake, 306
 kleinschmidt (Anthus), 59
 (Cuculus), 165
 (Galerida), 47
 (Parus), 76
 Knot, 273
 koenigi (Alectoris), 329
 (Fringilla), 27
 (Lanius), 84
 (Troglodytes), 141
 kollibayi (Micropus), 148

korejewi (Rallus), 317
 kriiperi (Sitta), 69
 krynicki (Garrulus), 8
 kuhli (Puffinus), 243

L

Lagopus, 322
 lagopus (Buteo), 191
 (Lagopus), 323
 lanceolata (Locustella), 99
 Laniidae, 82
 Lanius, 82
 lapponica (Limosa), 284
 (Strix), 174
 lapponicus (Calcarius), 40
 Lapwing, 267
 Lari, 290
 Laridae, 290
 Lark, Black, 43
 Calandra, 42
 Crested, 46
 Shore, 53
 Short-toed, 44
 Sky, 51
 Thick-billed, 42
 White-winged, 43
 Wood, 50
 Larus, 298
 latirostris (Muscicapa), 91
 laurencei (Corvus), 2
 laurivora (Columba), 253
 ledouci (Dryobates), 161
 (Parus), 73
 lentiginosus (Botaurus), 212
 leschanaultii (Charadrius), 264
 leucocephala (Emberiza), 34
 (Motacilla), 60
 (Oxyura), 233
 leucogastra (Sylvia), 110
 leucomela (Enanthe), 126
 leucopareia (Hydrochelidon), 291
 leucophthalmus (Larus), 305
 leucopsis (Asio), 171
 (Branta), 217
 leucoptera (Hydrochelidon), 291
 (Loxia), 26
 leucopterus (Larus), 301
 leucopyga (Enanthe), 129
 leucorodia (Platalea), 206
 leucorrhoa (Oceanodroma), 240

leucorrhoa (Enanthe), 124
 leucoryphus (Haliaetus), 199
 leucotus (Dryobates), 160
 leucura (Chettusia), 267
 (Enanthe), 128
 lilfordi (Dryobates), 161
 lilianæ (Dryobates), 162
 Limicola, 276
 Limicolæ, 258
 Limnoeryptes, 288
 Limosa, 284
 limosa (Limosa), 284
 linaria (Acanthis), 19
 lineatus (Milvus), 198
 (Numenius), 285
 Linnet, 18
 littoralis (Anthus), 59
 (Riparia), 146
 livia (Columba), 251
 lobatus (Phalaropus), 282
 Locustella, 98
 lomvia (Uria), 311
 longicauda (Bartramia), 269
 longicaudus (Stercorarius), 309
 longipennis (Calandrella), 44
 lorenzii (Phylloscopus), 92
 Loxia, 25
 lucida (Perdix), 332
 lugens (Enanthe), 128
 (Parus), 75
 lugubris (Parus), 75
 Lullula, 50
 Luscinia, 134
 lusciniæ (Luscinia), 135
 lusciniodes (Locustella), 98
 Lusiniola, 97
 lusitanicus (Parus), 73
 luteola (Emberiza), 35
 Lyrurus, 325

M

mabbotti (Prunella), 140
 macedonicus (Aegithalus), 79
 Machetes, 274
 macqueeni (Chlamydotis), 315
 macrodactyla (Certhia), 65
 Macrorhamphus, 276
 macrorhyncha (Galerida), 48
 (Petronia), 30
 macrorhynchus (Nucifraga), 6

- macrourus (Circus), 194
 macularius (Totanus), 281
 maculata (Galerida), 48
 (Tringa), 272
 madagascariensis (Porphyrio), 320
 madaraszi (Chloris), 15
 madeirensis (Anthus), 56
 (Petronia), 30
 (Regulus), 81
 maderensis (Columba), 252
 (Fringilla), 28
 magna (Luscinia), 137
 Magpie, 5
 Azure-winged, 6
 major (Aegithalus), 79
 (Carduelis), 17
 (Dryobates), 158
 (Lagopus), 323
 (Parus), 69
 (Platalea), 206
 (Upupa), 154
 Mallard, 220
 mallorcæ (Parus), 70
 maltæ (Passer), 32
 mandti (Uria), 312
 margaritæ (Chersophilus), 53
 marila (Nyroca), 226
 marina (Pelagodroma), 241
 marinus (Larus), 298
 maritima (Tringa), 273
 maroccana (Sylvia), 112
 maroccanus (Phalacrocorax), 236
 Martin, 145
 Crag, 146
 Sand, 145
 martius (Dryocopus), 163
 marwitzi (Micropus), 148
 maura (Saxicola), 131
 mauretanica (Jynx), 164
 mauretanicus (Puffinus), 242
 mauritanica (Certhia), 66
 (Cisticola), 115
 (Pica), 5
 (Riparia), 146
 (Strix), 175
 mauritanicus (Turdus), 122
 mauritanus (Dryobates), 160
 maxima (Sterna), 294
 meadewaldoi (Acanthis), 19
 (Hæmatopus), 290
 media (Gallinago), 288
 (Sterna), 293
 mediterranea (Acanthis), 18
 medius (Dryobates), 162
 Megalornis, 316
 megarhyncha (Luscinia), 134
 melanocephala (Ardea), 209
 (Emberiza), 34
 (Sylvia), 109
 melanocephalus (Larus), 303
 Melanocorypha, 42
 melanogrisea (Motacilla), 62
 melanoleuca (Enanthe), 126
 melanoleucus (Totanus), 278
 melanope (Motacilla), 63
 melanopogon (Lusciniola), 97
 melanota (Pica), 5
 melba (Micropus), 147
 meleagris (Numida), 334
 melophilus (Erithacus), 137
 merganser (Mergus), 233
 Merganser, Hooded, 235
 Red-breasted, 234
 Mergus, 233
 meridionalis (Caprimulgus), 150
 (Cinclus), 143
 (Delichon), 145
 (Galerida), 47
 (Lanius), 84
 Merlin, 182
 Meropes, 151
 Meropidæ, 151
 Merops, 152
 merula (Turdus), 121
 merzbacheri (Sylvia), 106
 mesoleuca (Phœnicurus), 133
 Micropus, 147
 migrans (Milvus), 198
 Milvus, 197
 milvus (Milvus), 197
 mimica (Lusciniola), 97
 minor (Calandrella), 44
 (Cinclus), 143
 (Cuculus), 165
 (Dryobates), 161
 (Garrulus), 8
 (Lanius), 82
 (Regulus), 81
 minos (Corvus), 3
 minula (Sylvia), 108
 minuta (Sterna), 296
 (Tringa), 271
 minutilla (Tringa), 271
 minutus (Ixobrychus), 211

minutus (Larus), 304
mira (Carine), 172
mitratus (Parus), 74
mlakusiewiczii (Lyrurus), 325
modularis (Prunella), 139
muritica (Galerida), 48
moesta (Enanthe), 127
mollis (Lanius), 84
 (Pterodroma), 244
mullissima (Somateria), 231
moltchanovi (Parus), 74
momus (Sylvia), 110
monacha (Enanthe), 129
monachus (Ægyptius), 204
monedula (Corvus), 4
mongolus (Charadrius), 263
montanella (Prunella), 139
montanus (Parus), 77
 (Passer), 32
Monticola, 122
Montifringilla, 29
montifringilla (Fringilla), 28
moreleti (Fringilla), 28
morinellus (Charadrius), 264
Motacilla, 59
Motacillida, 54
moussieri (Phœnicurus), 134
muhlei (Chloris), 15
muraria (Tichodroma), 67
murielæ (Saxicola), 130
murina (Pyrrhula), 23
murinus (Micropus), 148
Muscicapa, 88
Muscicapidæ, 88
musicus (Turdus), 118
mutus (Lagopus), 323
mystacea (Sylvia), 110

N

nævia (Locustella), 99
nana (Acanthis), 19
 (Sylvia), 109
natronensis (Prinia), 115
naumanni (Falco), 183
 (Fratercula), 313
 (Turdus), 119
nelularius (Totanus), 279
nebulosa (Strix), 175
neglectus (Phylloscopus), 92
Neophron, 203

Netta, 224
neumanni (Galerida), 47
 (Muscicapa), 89
neumayeri (Sitta), 69
newtoni (Parus), 70
nicolli (Ammoperdix), 330
 (Calandrella), 45
niger (Hæmatopus), 290
Nightingale, 134
 Thrush, 135
Nightjar, 149
 Rufous-necked, 150
nigra (Ciconia), 205
 (Hydrochelidon), 290
 (Oidemia), 229
nigricans (Galerida), 48
nigricollis (Podiceps), 248
niloticus (Lanius), 85
 (Passer), 31
nipalensis (Aquila), 187
nisoria (Sylvia), 105
nisus (Accipiter), 196
nitidus (Phylloscopus), 93
nivalis (Anser), 217
 (Montifringilla), 29
 (Plectrophenax), 41
nivea (Enanthe), 124
noctua (Carine), 172
nordmanni (Glaucala), 261
norrisæ (Sylvia), 110
norvegica (Somateria), 232
noskæ (Saxicola), 130
nubicus (Lanius), 85
Nucifraga, 6
Numenius, 285
Numida, 334
numidus (Dryobates), 160
Nutcracker, 6
Nuthatch, 67
 Rock, 69
Nyctea, 167
nyctea (Nyctea), 167
Nycticorax, 210
nycticorax (Nycticorax), 210
Nyroca, 225
nyroca (Nyroca), 225

O

obscura (Locustella), 98
 (Prunella), 140

obscurus (Parus), 71
 (Turdus), 119
 obsoleta (Riparia), 146
 occidentalis (Aquila), 186
 (Prunella), 140
 oceanicus (Oceanites), 240
 Oceanites, 240
 Oceanodroma, 240
 ochropus (Totanus), 279
 ochrurus (Phœnicurus), 133
 Œdicnemidæ, 258
 Œdicnemus, 258
 œdicnemus (Œdicnemus), 258
 Œnanthe, 123
 œnanthe (Œnanthe), 123
 œnas (Columba), 252
 ogliastræ (Parus), 71
 Oidemia, 229
 olivetorum (Hypolais), 104
 olor (Cygnus), 214
 ombriosa (Fringilla), 28
 ombriosus (Parus), 71
 onocrotalus (Pelecanus), 238
 opaca (Hypolais), 105
 oreophilus (Charadrius), 265
 orientalis (Acrocephalus), 100
 (Aquila), 187
 (Carduelis), 17
 (Cinclus), 143
 (Merops), 153
 (Otis), 314
 (Parus), 72
 (Phylloscopus), 94
 (Prunella), 140
 (Pterocles), 255
 (Streptopelia), 254
 (Turdus), 121
 Oriole, Golden, 13
 Oriolidæ, 12
 Oriolus, 13
 oriolus (Oriolus), 13
 Ortolan, 36
 Osprey, 201
 ostralegus (Hæmatopus), 289
 othmari (Emberiza), 40
 Otididæ, 313
 Otis, 313
 Otocorys, 53
 Otogyps, 204
 Otus, 169
 otus (Asio), 170
 Ouzel, Ring, 120

Owl, Barn, 176
 Eagle, 168
 Hawk, 174
 Lapland, 174
 Little, 172
 Long-eared, 170
 Pigmy, 173
 Scops, 169
 Short-eared, 170
 Snowy, 167
 Tawny, 175
 Tengmalm's, 171
 Ural, 175
 Oxyura, 233
 Oyster-catcher, 289

P

Pagophila, 305
 pallasi (Alcedo), 155
 (Surnia), 174
 pallescens (Corvus), 3
 pallida (Galerida), 47
 (Hypolais), 104
 pallidogularis (Luscinia), 136
 pallidus (Falco), 182
 (Troglodytes), 142
 palmæ (Fringilla), 28
 palmensis (Parus), 72
 paludicola (Riparia), 146
 palumbus (Columba), 252
 palustris (Acrocephalus), 101
 Emberiza, 40
 (Parus), 75
 Pandion, 201
 Panurus, 81
 par (Emberiza), 37
 (Sterna), 293
 paradisæa (Sterna), 295
 paradoxus (Motacilla), 62
 (Syrhaptēs), 258
 parallelicolor (Acanthis), 19
 parasiticus (Stercorarius), 308
 Paridæ, 69
 parroti (Dryobates), 159
 Partridge, 331
 Barbary, 329
 Red-Legged, 330
 Rock, 328
 See-See, 330
 Snow, 328
 Parus, 69

- parva (*Muscicapa*), 90
 parva (*Porzana*), 318
 parvus (*Carduelis*), 16
Passer, 30
Passeres, 1
passerinum (*Glaucidium*), 173
Pastor, 12
pecuarius (*Charadrius*), 263
pekinensis (*Falco*), 184
 (*Micropus*), 148
pelagica (*Thalassidroma*), 240
Pelagodroma, 241
pelegrinoides (*Falco*), 178
Pelican, *Dalmatian*, 238
 Roseate, 238
Pelecanidæ, 237
Pelecanus, 237
peloponnesus (*Parus*), 70
pendulinus (*Anthoscopus*), 79
penelope (*Anas*), 222
penicillata (*Otocorys*), 54
pennatus (*Hieraëtus*), 189
percnopterus (*Neophron*), 203
Perdix, 331
perdix (*Perdix*), 331
peregrinus (*Falco*), 177
Perisoreus, 8
Pernis, 200
persicus (*Merops*), 152
personata (*Motacilla*), 64
perspicillata (*Oidemia*), 230
Petrel, *Leach's Fork-tailed*, 240
 Madeira Fork-tailed, 241
 Stormy, 240
 Wilson's, 240
Petronia, 29
petronia (*Petronia*), 29
petrosus (*Anthus*), 58
phaeopus (*Numenius*), 286
Phalacrocoracidæ, 235
Phalacrocorax, 236
Phalarope, *Grey*, 282
 Red-necked, 282
Phalaropus, 282
Phasianidæ, 328
Phasianus, 333
Pheasant, 333
philadelphia (*Larus*), 303
phœnicophila (*Streptopelia*),
 255
Phœnicopteri, 212
Phœnicopteridæ, 212
Phœnicopterus, 212
phœnicura (*Ammomanes*), 46
Phœnicurus, 132
phœnicurus (*Phœnicurus*), 132
Phylloscopus, 91
Pica, 5
pica (*Pica*), 5
Pici, 156
Picidæ, 156
Picoides, 163
Picus, 156
pilaris (*Turdus*), 117
pileata (*Pyrrhula*), 23
pinetorum (*Dryobates*), 158
Pinicola, 24
Pintail, 223
Pipit, *American Water*, 58
 Canarian, 55
 Meadow, 56
 Petchora, 57
 Red-throated, 56
 Richard's, 55
 Rock, 58
 Tawny, 55
 Tree, 57
 Water, 57
pityopsittacus (*Loxia*), 26
Platalea, 206
Plectrophenax, 41
Plegadis, 206
pleskii (*Parus*), 72
Plover, *American Golden*, 265
 Asiatic Golden, 266
 Caspian, 264
 Crocodile, 260
 Golden, 265
 Grey, 266
 Kentish, 263
 Killdeer, 265
 Little Ringed, 262
 Ringed, 261
 Sociable, 267
 Spur-winged, 268
Pluvianus, 259
Pochard, 225
 Red-crested, 224
Podiceps, 246
Podicipidæ, 246
polatzeki (*Calandrella*), 45
 (*Fringilla*), 28
poliogyna (*Loxia*), 26
poltaratskyi (*Sturnus*), 12

polyglotta (*Hypolais*), 104
Polysticta, 231
pomarina (*Aquila*), 187
pomarinus (*Stercorarius*), 307
Porphyrio, 320
Porzana, 317
porzana (*Porzana*), 317
powelli (*Otus*), 170
præalpinus (*Dryobates*), 159
prageri (*Parus*), 74
pratensis (*Anthus*), 56
pratricula (*Glareola*), 261
Pratincole, 261
Prinia, 114
Procellariidæ, 239
pronus (*Picus*), 157
proregulus (*Phylloscopus*), 96
Prunella, 138
Prunellidæ, 138
przewalskii (*Lanius*), 84
Ptarmigan, 323
Pterocles, 255
Pterocletes, 255
Pteroclidæ, 255
Pterodroma, 244
Puffin, 312
Puffinidæ, 242
Puffinus, 242
puffinus (*Puffinus*), 242
pugnax (*Machetes*), 274
pulchellus (*Otus*), 169
punicus (*Accipiter*), 196
purpurascens (*Sturnus*), 11
purpurea (*Ardea*), 208
pusilla (*Emberiza*), 38
 (*Porzana*), 318
 (*Tringa*), 270
pusillus (*Ereunetes*), 274
Pycnonotidæ, 87
Pycnonotus, 87
pygargus (*Circus*), 194
pygmæa (*Motacilla*), 61
pygmæus (*Phalacrocorax*), 237
Pygopodes, 246
pyrenaicus (*Cinclus*), 142
 (*Lagopus*), 324
Pyrrhocorax, 9
pyrrhocorax (*Pyrrhocorax*), 9
Pyrrhula, 22
pyrrhula (*Pyrrhula*), 22
pyrrhuloides (*Emberiza*), 40

Q

Quail, 332
querquedula (*Anas*), 221

R

Rallidæ, 317
ralloides (*Ardeola*), 210
Rallus, 317
randonii (*Galerida*), 48
rapax (*Aquila*), 186
Raven, 1
 Fantailed, 2
rayi (*Motacilla*), 61
Razorbill, 309
Recurvirostra, 283
Redbreast, 137
Redpoll, *Coues*', 20
 Greater, 20
 Hornemann's, 20
 Lesser, 20
 Mealy, 19
Redshank, 277
 Dusky, 277
Redstart, 132
 Black, 133
Redwing, 118
Regulus, 80
regulus (*Regulus*), 80
reiseri (*Emberiza*), 40
 (*Hypolais*), 105
 (*Turdus*), 117
Rhamphocorys, 42
rhenanus (*Parus*), 76
rhpidurus (*Corvus*), 2
Rhodopechys, 22
Rhodostethia, 297
richardi (*Anthus*), 55
ridibundus (*Larus*), 304
riggenbachii (*Galerida*), 48
 (*Enanthe*), 128
ringvia (*Uria*), 311
Riparia, 145
riparia (*Riparia*), 145
Rissa, 306
robusta (*Perdix*), 332
robustus (*Totanus*), 278
Roller, 154
romanice (*Picus*), 157
Rook, 3
rosea (*Rhodostethia*), 297

roseus (Aegithalus), 78
 (Pastor), 12
 rossikowi (Pyrrhula), 23
 rostrata (Acanthis), 20
 (Enanthe), 124
 Rostratula, 289
 rothschildi (Buteo), 191
 rubecula (Erithacus), 137
 ruber (Phœnicopterus), 213
 rubescens (Anthus), 58
 rubetra (Saxicola), 129
 rubicillus (Carpodacus), 24
 rubicola (Saxicola), 130
 Ruby-throat, Siberian, 135
 rudis (Ceryle), 156
 rufa (Alectoris), 330
 (Tringa), 273
 rufescens (Calandrella), 45
 Ruff, 274
 ruficollis (Branta), 218
 (Caprimulgus), 150
 (Corvus), 2
 (Turdus), 120
 ruficolor (Galerida), 49
 rufiga (Netta), 224
 rufitergum (Garrulus), 7
 rufula (Hirundo), 144
 rumæniæ (Carduelis), 16
 rupestris (Riparia), 146
 (Tetrastes), 327
 rupicolæformis (Falco), 184
 ruppelli (Sylvia), 109
 russicus (Panurus), 82
 rustica (Emberiza), 38
 (Hirundo), 144
 rusticola (Scolopax), 287
 rusticolus (Falco), 180
 ruthenus (Bubo), 168
 Rynchops, 306

S

sabinii (Gallinago), 287
 (Nema), 297
 sabyi (Numida), 334
 saharæ (Caprimulgus), 151
 (Carine), 173
 (Emberiza), 38
 (Oedipodiformis), 259
 (Passer), 33
 (Scotocerca), 114
 sakhalina (Tringa), 270

salicarius (Parus), 76
 Sanderling, 275
 Sand Grouse, Black-bellied, 255
 Pallas's, 258
 Pin-tailed, 256
 Sandpiper, Baird's, 272
 Bartram's, 269
 Bonaparte's, 273
 Broad-billed, 276
 Buff-breasted, 275
 Common, 281
 Curlew, 269
 Green, 279
 Marsh, 278
 Pectoral, 272
 Purple, 273
 Semi-palmated, 274
 Siberian Pectoral, 272
 Solitary, 280
 Spotted, 281
 Terek, 281
 Wood, 280
 sandvicensis (Sterna), 294
 sanguinea (Rhodopechys), 22
 sapsworthii (Cinclus), 143
 sarda (Carine), 172
 (Sylvia), 113
 sardonius (Corvus), 3
 sardus (Corvus), 2
 (Erithacus), 137
 (Parus), 73
 sarudnyi (Caprimulgus), 150
 saundersi (Picus), 157
 (Sterna), 296
 savignii (Hirundo), 144
 saxatilis (Alectoris), 329
 (Monticola), 122
 Saxicola, 129
 schiebeli (Turdus), 121
 schimperi (Columba), 252
 schinzi (Tringa), 270
 schmitzi (Flammea), 176
 (Motacilla), 63
 schœniclus (Emberiza), 39
 schœnobæus (Acrocephalus), 102
 schvedowi (Aster), 195
 schwarzi (Herbivocula), 96
 schwederi (Parus), 73
 scirpaceus (Acrocephalus), 101
 Scissor-bill, African, 306
 scita (Hypolaïs), 105
 Scolopax, 287

- scops (Otus), 169
 Scoter, Common, 229
 Surf, 230
 Velvet, 229
 scotica (Loxia), 25
 scoticus (Lagopus), 323
 (Parus), 74
 Scotocerca, 114
 seebohmi (Enanthe), 124
 semipalmatus (Charadrius), 262
 semirufus (Phœnicurus), 133
 semitorquata (Muscicapa), 90
 senator (Lanius), 85
 senegalensis (Centropus), 167
 (Eidicnemus), 259
 (Pterocles), 257
 (Streptopelia), 255
 senegalus (Telephonus), 86
 senegallus (Pterocles), 256
 septentrionalis (Phasianus), 334
 Serinus, 21
 serinus (Serinus), 21
 serrator (Mergus), 234
 Shag, 236
 sharpei (Picus), 157
 Shearwater, Great, 243
 Levantine, 242
 Manx, 242
 Sooty, 244
 Sheldrake, 219
 Ruddy, 219
 Shoveler, 224
 Shrike, Great Grey, 83
 Lesser Grey, 82
 Masked, 85
 Red-backed, 86
 Woodchat, 85
 sibilatrix (Phylloscopus), 94
 sibirica (Melanocorypha), 43
 sibiricus (Bubo), 168
 (Turdus), 116
 sculus (Aegithalus), 78
 sierræ (Alauda), 52
 simplex (Passer), 33
 (Sylvia), 107
 Siskin, 17
 Sitta, 67
 Sittidae, 67
 Skua, Great, 307
 Long-tailed, 309
 Pomatorhine, 307
 Richardson's, 308
 skua (Stercorarius), 307
 Smew, 235
 Snipe, Common, 287
 Great, 288
 Jack, 288
 Painted, 289
 Red-breasted, 276
 solitarius (Monticola), 123
 (Totanus), 280
 Somateria, 231
 sophiæ (Sturnus), 11
 Sparrow, Desert, 33
 House, 30
 Italian, 31
 Rock, 29
 Spanish, 31
 Tree, 32
 Sparrow-Hawk, 196
 Spatula, 224
 spatzi (Alectoris), 329
 (Saxicola), 130
 spectabilis (Somateria), 232
 speculigera (Muscicapa), 89
 spermologus (Corvus), 4
 sphagnetorum (Perdix), 332
 spinoletta (Anthus), 57
 spinosus (Hoplopterus), 268
 Spinus, 17
 spinus (Spinus), 17
 splendidior (Dryobates), 162
 spodiogenys (Fringilla), 27
 Spoonbill, 206
 Squatarola, 266
 squatarola (Squatarola), 266
 stagnatilis (Parus), 75
 (Totanus), 278
 Starling, 10
 Rose-coloured, 12
 Steganopodes, 235
 stellaris (Botaurus), 212
 stellatus (Colymbus), 250
 stelleri (Polysticta), 231
 stentoreus (Acrocephalus), 101
 Stercorariidæ, 307
 Stercorarius, 307
 Sterna, 292
 Stilt, Black-winged, 283
 Stint, American, 271
 Little, 271
 Temminck's, 271
 stolidus (Anous), 296
 Stonechat, 130

Stork, Black, 205
 White, 205
straminea (*Locustella*), 99
strepera (*Anas*), 222
streperus (*Acrocephalus*), 101
Streptopelia, 253
Striges, 167
Strigidae, 167
striolata (*Emberiza*), 39
Strix, 174
Sturnidae, 10
Sturnus, 10
subalpina (*Prunella*), 139
 (*Sylvia*), 110
subboschas (*Anas*), 220
subbuteo (*Falco*), 181
subcormoranus (*Phalacrocorax*), 236
subpersonata (*Motacilla*), 64
subruficollis (*Tryngites*), 275
suecica (*Luscinia*), 135
Sula, 238
Sulidae, 238
sulphureus (*Parus*), 70
superbus (*Erithacus*), 138
superciliosus (*Phylloscopus*), 95
superflua (*Galerida*), 49
Surnia, 174
suschkini (*Colymbus*), 250
Swallow, 144
 Red-rumped, 144
Swan, Bewick's, 214
 Mute, 214
 Whooper, 213
Swift, 147
 Alpine, 147
 Needle-tailed, 149
 Pallid, 148
syenitica (*Enanthe*), 128
sylvatica (*Turnix*), 322
Sylvia, 105
syriacus (*Agrobates*), 114
 (*Dryobates*), 159
 (*Turdus*), 122
Syrhaptes, 257

T

Tadorna, 219
tadorna (*Tadorna*), 219
taiyrensis (*Larus*), 300
taiti (*Aegithalus*), 78
tanypterus (*Falco*), 178

tarda (*Otis*), 313
Tarsiger, 131
tatjanae (*Coccothraustes*), 14
tauricus (*Aegithalus*), 79
 (*Sturnus*), 11
Teal, 220
 American Green-winged, 221
 Blue-winged, 221
Telephonus, 86
temmincki (*Tringa*), 271
teneriffæ (*Parus*), 71
 (*Regulus*), 81
tenuirostris (*Galerida*), 47
 (*Numenius*), 286
tephronotus (*Aegithalus*), 79
Terekia, 281
Tern, Allied, 293
 Arctic, 295
 Black, 290
 Caspian, 293
 Common, 294
 Gull-billed, 292
 Little, 296
 Noddy, 296
 Roseate, 295
 Royal, 293
 Sandwich, 294
 Sooty, 296
 Whiskered, 291
 White-winged Black, 291
Tetrao, 326
Tetraogallus, 328
Tetraonidae, 322
Tetrastes, 327
tetrax (*Otis*), 314
tetrix (*Lyrurus*), 325
teydea (*Fringilla*), 28
Thalassidroma, 239
thanneri (*Dryobates*), 160
theklae (*Galerida*), 49
Threskiornis, 207
Thrush, Black-throated, 120
 Blue Rock, 123
 Dusky, 119
 Mistle, 117
 Red-throated, 120
 Rock, 122
 Song, 118
 White's, 116
thunbergi (*Motacilla*), 60
tianschanicus (*Parus*), 72
tibetanus (*Corvus*), 2

Tichodroma, 67
 tingitanus (Asio), 171
 (Corvus), 2
 (Passer), 31
 tinnunculus (Falco), 184
 tintillon (Fringilla), 28
 Tit, Azure, 72
 Bearded, 81
 Blue, 70
 Coal, 72
 Crested, 74
 Great, 69
 Long-tailed, 77
 Marsh, 75
 Penduline, 79
 Siberian, 75
 Sombre, 75
 Willow, 76
 toni (Sylvia), 112
 torda (Alca), 309
 torquata (Saxicola), 131
 torquatus (Turdus), 120
 torquilla (Jynx), 164
 Totanus, 277
 totanus (Totanus), 277
 transcaspicus (Monticola), 123
 transitiva (Hirundo), 144
 transitivus (Dryobates), 162
 tridactyla (Rissa), 306
 tridactylus (Picoides), 163
 Tringa, 269
 tristis (Phylloscopus), 92
 trivialis (Anthus), 57
 trocaz (Columba), 253
 trochilus (Phylloscopus), 92
 Troglodytes, 140
 troglodytes (Troglodytes), 141
 Troglodytidae, 140
 troille (Uria), 311
 Tryngites, 275
 tschusii (Carduelis), 16
 (Emberiza), 39
 (Jynx), 164
 Tubinares, 239
 tundræ (Charadrius), 262
 tuneti (Micropus), 147
 Turdus, 116
 Turnices, 322
 Turnix, 322
 Turnstone, 268
 turtur (Streptopelia), 253
 Twite, 19

tyrrhenica (Fringilla), 27
 (Muscicapa), 89
 tyrrhenicus (Aegithalus), 78

U

ultramarinus (Parus), 71
 ultramontana (Certhia), 66
 ulula (Surnia), 174
 undata (Sylvia), 112
 undulata (Chlamydotis), 315
 unicolor (Micropus), 148
 (Sturnus), 12
 unwini (Caprimulgus), 150
 Upupa, 153
 Upupæ, 153
 Upupidae, 153
 uralensis (Dryobates), 160
 (Sitta), 68
 (Strix), 175
 (Tetrao), 326
 urbica (Delichon), 145
 Uria, 310
 urogallus (Tetrao), 326

V

vaillanti (Picus), 157
 Vanellus, 266
 vanellus (Vanellus), 267
 varius (Corvus), 1
 vespertinus (Falco), 183
 vidalii (Carine), 173
 vieiræ (Parus), 73
 virago (Ænanthe), 124
 virescens (Picus), 157
 virgo (Anthropoides), 316
 viridanus (Lyrurus), 325
 (Phylloscopus), 93
 viridis (Picus), 156
 viscosus (Turdus), 117
 vociferus (Charadrius), 265
 volgæ (Emberiza), 40
 (Luscinia), 136
 volgensis (Carduelis), 16
 (Passer), 32
 (Tetrao), 326
 vulgaris (Sturnus), 10
 vulpinus (Buteo), 190
 Vulture, Bearded, 202
 Black, 204
 Egyptian, 203
 Griffon, 203

W

- Wagtail, Black-headed, 62
 Blue-headed, 59
 Grey, 62
 Grey-headed, 60
 Pied, 64
 White, 63
 Yellow, 61
 Warbler, Aquatic, 103
 Barred, 105
 Blyth's Reed, 102
 Bonelli's, 94
 Bowman's 110
 Cetti's, 97
 Dartford, 112
 Dusky, 96
 Eversmann's, 95
 Fantail, 115
 Garden, 107
 Grasshopper, 99
 Great Reed, 100
 Greenish, 93
 Icterine, 103
 Lanceolated, 99
 Marmora's, 113
 Marsh, 101
 Melodious, 104
 Moustached, 97
 Orphean, 106
 Reed, 101
 River, 98
 Rufous, 113
 Rüppell's, 109
 Sardinian, 109
 Savi's, 98
 Sedge, 102
 Spectacled, 111
 Subalpine, 110
 Willow, 92
 Wood, 94
 Yellow-browed, 95
 Waterhen, 320
 Water-Rail, 317
 Waxwing, 87
 weigoldi (*Carduelis*), 16
 (*Parus*), 74
 Wheatear, 123
 Black, 128
 Desert, 125
 Greenland, 124
 Isabelline, 127
 Wheatear, Mourning, 127
 Pied, 126
 White-rumped, 129
 Whimbrel, 286
 Whinchat, 129
 whitakeri (*Ammomanes*), 46
 (*Garrulus*), 8
 whiteheadi (*Sitta*), 68
 Whitethroat, 107
 Lesser, 108
 Wigeon, 222
 American, 223
 wilkowskii (*Strix*), 175
 witherbyi (*Erithacus*), 138
 wolterstorffi (*Accipiter*), 197
 Woodcock, 287
 Woodpecker, Black, 163
 Great Spotted, 158
 Green, 156
 Lesser Spotted, 161
 Middle Spotted, 162
 Three-toed, 163
 White-backed, 160
 Wren, 141
 Wryneck, 164

X

- xanthophrys (*Motacilla*), 62
 xanthoprymna (*Enanthe*), 127
 xanthothorax (*Erithacus*), 138
 Xema, 297

Y

- yarrelli (*Motacilla*), 64
 yelkouan (*Puffinus*), 242
 Yellow Hammer, 33
 Yellowshank, 278
 Greater, 278
 yeltoniensis (*Melanocorypha*), 43

Z

- zarudnyi (*Acrocephalus*), 100
 zedlitzii (*Erythropsiza*), 22
 zetlandicus (*Sturnus*), 10
 (*Troglodytes*), 141
 zimmemmannæ (*Buteo*), 190

PRINTED BY
OLIVER AND BOYD
EDINBURGH, SCOTLAND

Second Edition. Medium 8vo, 472 pages. Price 14/- net.

BIRD-LIFE OF THE BORDERS

ON MOORLAND AND SEA

WITH FAUNAL NOTES EXTENDING OVER FORTY YEARS

BY ABEL CHAPMAN, F.Z.S.

MEMBER OF THE BRITISH ORNITHOLOGISTS' UNION
AUTHOR OF "WILD NORWAY," AND "WILD SPAIN"

With Map, 26 Full-page and Numerous Text Illustrations

PRESS REVIEWS

"Mr Abel Chapman has now over forty years of notes to draw upon, and he has taken great care in revising a work that bids fair to become classic. It is delightful reading, and describes the wild life of Northumbria to perfection. Migration, shooting, fishing, wild-fowling, and the habits of birds are written of with an intimate knowledge that few can hope to acquire."—*Spectator*.

"This is the second edition of what was deservedly the bird-book of the year 1889. Written by one possessed of an intimate knowledge of his subject, and an attractive pen, and a first-rate ornithologist to boot, the edition soon became exhausted and the book has been very scarce for many years. The work was certainly well worthy of being reprinted, but fortunately more than this has been accomplished, for Mr Chapman has been induced to practically re-write and much enlarge the book; and he has added several plates to his series of original and vigorous pen-and-ink sketches—pictures that will be much appreciated by those familiar with bird-life in the open. There is no better book of its kind, and to Scottish naturalists it will be specially acceptable since it deals with the bird-life of the Cheviots, the moorlands of the Border, and the adjacent seaboard. In its new form it will be welcome even to those who possess the original edition."—*The Annals of Scottish Natural History*.

"As a faithful record of bird-life on moorland and sea we know of no more interesting work than the one before us, and the whole book teems with practical notes as a result of over forty years' careful observation. It is one of the most valuable records of wild life ever written, and the talented author's clever sketches, as well as his writing, add in no small measure to the general excellence of the volume. We never remember reading a book with so much pleasure and profit, and we fervently wish that every lover of Nature was as observant as Mr Chapman."—*The Naturalist's Quarterly Review*.

GURNEY AND JACKSON

33 PATERNOSTER ROW, LONDON, E.C.

Large 8vo. 248 Illustrations, 472 pages. Price 32/- net

SAVAGE SUDAN

ITS WILD TRIBES, BIG-GAME
AND BIRD-LIFE

By ABEL CHAPMAN

AUTHOR OF "WILD SPAIN," "WILD NORWAY," "BIRD-LIFE OF THE BORDERS," ETC.

With 53 Full-page and 195 Text Illustrations

PRESS REVIEWS

"Mr Abel Chapman's books are good from every standpoint. He is a sportsman who knows how to observe, and how to tell what he sees. He is a Big-Game hunter of renown; and on every hunt he watches with keen interest all the smaller life of the wilderness. He can both write and draw. There is not one of his books, whether dealing with the land-birds and wild-fowl of Northumberland, with wild Norway or wilder Spain, or with the giant fauna of Equatorial Africa which a man who cares for natural history, shooting, or hunting, can afford to be without. . . . We know exactly how the rhinoceros looked and how he acted; we see the hartebeest overcome with pride as he leads the thirsty files of wildebeests down to the water. . . . Moreover, with pen and pencil he brings before us pictures of many of those striking birds that delight the eyes of the African hunter."—THEODORE ROOSEVELT.

"Mr Chapman stands in the front rank of those who have studied and pursued wild creatures in their native haunts at home or abroad. In this pioneer attempt to describe the Sudan from the point of view of the hunter-naturalist, he is completing a tale of fifty-four overseas ventures carried out during half a century, 1869-1921. His illustrations are very copious and of excellent quality."—*Times Literary Supplement*.

"Mr Chapman is one of the very best hunter-naturalists, and he tells of the habits of all the wild life which he encountered as he himself observed them. The more faithful a story is to nature the more interesting it becomes, and the more valuable the lessons which may be learnt. All Mr Chapman's little stories—and he has many a charming little anecdote told in his delightful way—are wholly faithful to nature. There cannot be a moment's doubt on that point. Consequently this is a book which one may read many times, and each time learn something new.

"The author's many sketches of animal and bird life add to the charm of this delightful record of careful observations, and the book will live as one of the outstanding classics among sporting literature."—*The Field*.

GURNEY AND JACKSON

33 PATERNOSTER ROW, LONDON, E.C.

Large 8vo. 88 Illustrations, 384 pages. Price 30/- net.

THE CANARY ISLANDS

THEIR HISTORY, NATURAL HISTORY
AND SCENERY

AN ACCOUNT OF AN ORNITHOLOGIST'S
CAMPING TRIPS IN THE ARCHIPELAGO

By DAVID A. BANNERMAN

M.B.E., B.A. (Cantab), M.B.O.U., F.R.G.S., Etc.

With 3 Coloured Plates, 4 Sketch Maps, and 80 Other Illustrations

PRESS REVIEWS

"It is a book for which there was distinctly room, and Mr Bannerman has placed under a debt of gratitude not only the student at home, but every winter visitor to the Canaries who has any of the instincts of the naturalist. The book is admirably equipped with maps and photographs, and in addition it has three coloured plates showing Canarian chaffinches and titmice, a complete annotated list of the birds found in the islands, and an index."—*The Field*.

"The book is well printed on good paper and is a credit to the publishers, and we hope that it will meet with the success it deserves. It will certainly be of the greatest interest to all visitors or residents in the Canaries, while no ornithologist should neglect the perusal of its fascinating pages."—*The Ibis*.

GURNEY AND JACKSON

33 PATERNOSTER ROW, LONDON, E.C.

MANUAL OF BRITISH BOTANY

CONTAINING THE FLOWERING PLANTS
AND FERNS ARRANGED ACCORDING TO
THE NATURAL ORDERS

BY CHARLES CARDALE BABINGTON

M.A., F.R.S., F.L.S.

Late Professor of Botany in the University of Cambridge

TENTH EDITION. WITH AMENDED NOMENCLATURE AND AN APPENDIX

EDITED BY A. J. WILMOTT, B.A., F.L.S.

Assistant in the Department of Botany, British Museum

PRESS REVIEWS

"This edition of Babington's well-known flora is one of the best for the use of students in the field. The descriptions are concise yet detailed, and the more important features are in italics. It is especially valuable as the plant names have been brought up-to-date by a critical systematist, and an appendix has been added embodying the more important additions to our knowledge of the British flora; this appendix includes a conspectus of the *Rubi fruticosi*, reprinted from Moyle Rogers' *Handbook of the British Rubi*."—*Education*.

"We welcome an up-to-date edition of this excellent standard work on our British flora. Few words are necessary to recommend this volume to the student and field botanist. It is essentially a reprint of the last edition, but the nomenclature has been thoroughly revised in accordance with the latest ideas, while an appendix has been added which includes the most important additions to our knowledge of British flowering plants. To those readers who are unfamiliar with "Babington," it may be interesting to point out that the work has several features peculiarly its own, *e.g.*, an excellent, though concise, account of the various aquatic forms of Crowfoot (*Ranunculus*), and fairly exhaustive accounts of the different genera *Rubus*, *Rosa*, and *Hieracium*, founded upon the monographs of Babington, Moyle Rogers, and Hanbury. By the use of thin India paper, rounded corners, and good flexible binding, this masterly volume, although containing over 600 pages, slips easily into the ordinary coat pocket, and may thus be carried with the utmost convenience into the field."—*The Scottish Naturalist*.

GURNEY AND JACKSON

33 PATERNOSTER ROW, LONDON, E.C.

AMNH LIBRARY



100104425